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Bargain Passenger Travel

THE experimental introduction from January 25 of cheap evening return fares to central London from British Railways and Underground stations in the London area is a vigorous effort to increase revenue to offset rising costs and some drop in travel at off-peak periods. Some details are given on another page. The scheme bears every indication of the hand of Mr. A. B. B. Valentine, Member of the London Transport Executive, whose detailed knowledge and experience of London travel problems is so widely recognised; doubtless he received assistance in getting it adopted at this time by the new Chairman, Mr. John Elliot. The scheme is frankly experimental. It is unlikely to go far to close the gap between revenue and rising expenditure although by creating traffic it may well produce some additional revenue and to this extent improve the position. It is, in effect, applying the principle of the business risk in reducing prices in the hope, based on judgment, of attracting greater custom. How far the falling off in evening travel will be arrested is problematical. The experiment, the first far-reaching measure of this kind affecting London since the war, is a development of the principle of quoting bargain prices in the sale of passenger transport. An important step in this direction was taken by British Railways last year in the introduction of the "Starlight Special" trains between London and Glasgow, the two largest population centres in the country, and London and Edinburgh. These are to be revived this summer but this particular arrangement is not, it seems, to be extended to other journeys. The several Regions of British Railways, however, which are making their own arrangements to implement the London cheap evening fares scheme, have done and are doing much in the quotation of cheap day and excursion fares all over the country, with a considerable degree of success in competing with other forms of transport.

New Year Resolutions for London Transport

TO keep down through efficiency and economy the rising costs that confront London Transport is the first of two new year resolutions proposed by Mr. John Elliot, in a message to employees of the London Underground and bus services, as recorded elsewhere in this issue. Not only are costs still rising, he points out, but off-peak traffic shows a tendency to decline; to keep up revenue London Transport staff must make the service as attractive and comfortable as possible, for which he propounds his second resolution, to maintain and enhance the reputation of London Transport as the world's finest urban system. Mr. Elliot, who pledges himself to devote his long experience in transport to helping the men and women of London Transport "to go on doing their jobs even better in the future," can be relied on to tackle these problems with the same vigour and leadership he showed as a senior railway officer and as Chairman of the Railway Executive.

New Locomotives and Rolling Stock in 1954

IMPROVED steel supplies are a major cause of the enlarged locomotive and rolling stock building programme of the British Transport Commission for British Railways during the current year, of which some details are given on another page. The construction of 1,820 passenger vehicles, two-and-a-half times the number built last year, by facilitating withdrawal of over-age vehicles hard to clean and otherwise below modern standards, will go far to remove a cause for complaint about passenger services. A feature of the plans for wagon construction is the large proportion, necessitated largely by the recent increase in mineral traffic, of wagons for heavy loads of steel, besides those for other heavy loads up to 65 tons. Some 570 passenger train and 33,000 freight vehicles are to be built by contractors. New motive power will include some diesel-mechanical shunters, and also a number of steam shunting tank engines; among steam locomotives to be constructed to standard designs will be the first of the class "9" 2-10-0 type heavy goods.

Outlook for Machine Tool Exports

THIS year may well be a testing time for the British machine tool industry. In selling its products in the overseas markets it must face the severe challenge of Germany, whose production has increased remarkably, and the U.S.A. and the growing competition of France, Italy and Belgium. One particularly encouraging market is Cañada, which took an estimated £3,600,000 worth of machine tools from this country last year, compared with under £1,000,000 four years ago. Much of our success there has been attributable to excellent salesmanship at the Canadian International Trade Fair. In the same period exports to Australia have a little more than doubled, to £4,000,000, but those to India have dropped from £2,500,000 to £1,900,000. In quality British machine tools

more than hold their own, and their prices are known to be competitive. Quicker deliveries may sometimes be offered, however, by Continental manufacturers who are neither committed to defence work nor have a heavy backlog of orders. The onus this year will rest largely on our machine tool salesmen to bring in the sufficiency of export business on which the prosperity of the industry turns.

Traffic Clearance by Rail from Mombasa

ON the last day of 1953 the tonnage of traffic hauled by the East African Railways from Mombasa Island was far in excess of any figure previously recorded. The total was 6,496 deadweight tons, a substantial increase on the previous best tonnage of 6,025 achieved early in December. The highest figure recorded during 1952 was 4,626. Approximate figures which are now available indicate that the inwards freight movement by rail from Mombasa last year exceeded the 1952 total by at least 12 per cent. The respective totals are given as 1,274,419 and 1,137,876 deadweight tons and they compare with 1,037,220 tons in 1951 and 915,294 in 1950. New deep-water berths are being constructed at Mombasa which will greatly improve the facilities of the port, but an essential to their working is the construction of a new line between the existing port area and the mainland at Changamwe over a new causeway crossing Macupa Creek. This important link, which is estimated to cost a total of some £195,000, has been recommended by the Transport Advisory Council.

New Station at Portishead

SOME notable examples of country stations whose architecture blends with that of the district are to be found in the Cotswolds, where the Great Western Railway, a few years before the last war, rebuilt in local stone and in keeping with the characteristic local style some of the stations on its Banbury-Cheltenham branch. Recently the Western Region has carried out another interesting and successful rebuilding in the West Country, this time at Portishead, the terminus of a short branch from Bristol which was opened in 1867 and worked by the Bristol & Exeter Railway, though owned by an independent company. Local development required the selection of a new and, incidentally, more central site for the station. The opportunity was therefore taken to design and execute largely in stone a new building which, up-to-date in style, would yet harmonise with the surroundings. As shown in the description and illustrations on another page the result is a handsome structure, embodying novel features such as an unusually long platform roof, which is an asset to this residential town on the Somerset coast.

Control at Southampton

THE District Control Office of the Southern Region at Southampton is now housed in attractively-designed and conveniently-placed premises, which are an extension of the existing District Office outside the Central Station. The new room, with its stepped floor and well-arranged desks for the Area Controllers, befits the importance of the District, which covers approximately from Basingstoke to Dorchester and from Portsmouth to Salisbury and all the former Somerset & Dorset line. The inauguration of the office, which is described briefly on another page, follows that of new premises for control staff in the London East, London Central, and London West Districts of the Southern Region. Through Southampton pass not only ocean liner expresses and those from Waterloo to Bournemouth and Weymouth but also cross-country trains both within the Region and from other Regions. There is also a considerable goods traffic emanating from the docks and from industry in the Southampton district. The pleasant surroundings in which the controllers now regulate this heavy traffic must undoubtedly contribute to efficient working at this focal point of the Region.

Replacing a Four-Track Swing Bridge

A MAJOR new work now in hand on the New York Central Lines, is the replacement of the four-track swing bridge over the Harlem River in New York by a pair of lift spans. Considerably faster and more efficient operation will be secured when the new structure is completed in 1956. River navigation traffic will cause shorter interruptions to the frequent train service in and out of the busy Grand Central Terminal. Elimination of the massive central pier of the swing bridge will greatly facilitate the river traffic. Twin curved viaduct approaches are a heavy item in the $18,000,000 estimated overall cost, but the contract for the bridge superstructural work, let to the American Bridge Company, accounts for about half the total expenditure. The erection of the lift towers is now in progress and one of the outer approach viaducts is practically complete. It would seem that the ultimate changeover from the old to the new route is likely to be a complicated matter under such heavy traffic.

An Early "Normal Danger" Advocate

IN our Scrap Heap columns this week a letter published in *The Manchester Guardian* a century ago is reproduced, in which the writer, complaining of the number of accidents, suggests that the normal position of the station signals should be "danger" and not "all right" and, moreover, that they should be changed to the latter aspect in sight of the driver. This was in the days of the "time interval" and was meant to ensure that signals were not left at "all right" after a train had passed, by negligence of the station staff. Although keeping signals normally at danger became eventually general practice in Great Britain, after block working came in, as actually proposed by the pioneer of the "space interval," W. F. Cooke, they had necessarily to be cleared before the driver sighted them to enable fast traffic to be run. In the early days of automatic signalling in America, however, clearing the signals in view of the engineman was adopted to guard against false clear failures but later had to be abandoned, although some lines continued to use "normal danger" controls. The idea appeared in another form nevertheless on one or two lines, such as the Boston & Maine, with "normal clear" automatic signals. The track circuit dividing point was set a short distance in rear of each signal, with indicating signboard, and a driver was required to see the semaphore arm start to return to "danger" before he reached it, failing which he was to treat it as out of order and act accordingly. With the signal at "danger" he had, of course, to stop at the signboard.

Fascination of Interlocking

IN an address to the Southern Region Signal & Telecommunications Technical Society on January 6, Mr. H. Newman remarked that the designing of interlocking whether mechanical or electrical, was to him the most important part of signalling and a subject known thoroughly to comparatively few; this opinion which will be widely shared. Much training and practice are necessary and involve practical engineering knowledge, besides a good acquaintance with traffic rules and regulations, to become a competent interlocking designer. Although the Stevens tappet system has long superseded other types in new mechanical locking frames in Great Britain, the existence of other forms, a legacy from the days of the old companies and contractors, has led to many detailed variations in construction still being met with, both of the "direct lever" and "catch handle" type especially perhaps in the means used to effect "conditional" locking. Mr. Newman showed how important it was to study the locking table itself in a scientific way before beginning to set out the actual construction of the mechanism. He demonstrated the working of the remarkable special locking device designed by a former L.S.W.R. officer, Mr. F. C. Stowell, used by the Southern Region but little known elsewhere, with the arrangements more generally employed. By making the locking details of machined parts with the aid of jigs, much fitting can now be avoided and safer and better working mechanism obtained.

A Propane Gas-Turbine-Electric Locomotive

IN a 4,800 h.p. gas-turbine-electric locomotive now in regular service on the Union Pacific Railroad the fuel used is not oil but propane. In other respects this 246-ton unit is uniform with the series of gas-turbine-electric locomotives which has been in service for some time, chiefly on freight trains, on the U.P. main line between Green River and Ogden, Utah. The turbine speed at full output is about 6,900 r.p.m.; through reduction gears the turbine drives four generators, which supply current to the 16 traction motors; the wheel arrangement is Bo-Bo-Bo-Bo. The advantage of propane as fuel is that it leaves no carbon deposit on the turbine blades, and therefore should reduce the time needed for maintenance and overhaul. To carry the propane, a special tender, in the form of a bogie tank wagon, is attached to the locomotive; between the outer shell of the tank and the container proper, a 4 in. layer of cork is interposed. Steam is passed into a radiator in the tank to increase the pressure under which the liquid propane is confined. Propane is the lightest fraction of petroleum, and has an octane rating of 125; hitherto it has generally been burned off at the oilfields because of the cost of building special pressure tanks to accommodate it. If it is found adaptable as a locomotive fuel, it should thus have the merit of cheapness.

South Wales and the Western Region

THE South Wales Area of the Western Region covers the Newport, Cardiff, and Swansea Districts. The population served is about 1,350,000, more than 1,000,000 concentrated in the industrial parts of Monmouthshire and Glamorgan. The great part played by South Wales in the economy of the Region was brought out by Mr. H. H. Swift, South Wales Area Officer, Western Region, in his paper "The Importance of the South Wales Area to the Western Region" read to the British Railways, Western Region, London Lecture & Debating Society on January 7.

The availability of coal and iron ore in close proximity led last century to rapid industrial development in South Wales. The great network of railways came into being mainly during the second half of the century, principally to link the valleys with the ports. There were 20 railway companies in South Wales at the time of the 1922 amalgamation. They brought into the Great Western a combined first track mileage of nearly 450 miles, and hundreds of miles of sidings, 767 locomotives, 950 coaches and nearly 8,000 wagons. The companies were self-contained, serving one or more adjacent valleys, as well as the ports.

Nowhere was the inter-war depression felt more than the mining and steel producing valleys. The conditions seriously affected rail carryings. In 1934, Lord Portal—a director of the G.W.R. who became its last Chairman—was instrumental in initiating, as Chairman of a Government Commission, at Treforest the first of four major industrial trading estates in South Wales. This marked the beginning of an era of new, diverse industrial activity in the area. When the war came, industrial effort advanced to full capacity and South Wales became one of the main arsenals of the country, rail requirements reaching unprecedented levels. It became necessary to quadruple the nine-mile section between Newport and Severn Tunnel Junction and provide additional loops on the Shrewsbury-Hereford line which, from an operating point of view entirely changed its character. Up to 806 freight trains passed weekly from South Wales to England by the three main routes (Severn Tunnel, Gloucester, and Hereford).

After the war Government action in the way of special inducements to attract industrialists assured almost full employment throughout South Wales. Prospects included building standard factories let at concessionary rentals, the conversion of ordnance depots into trading estates, and the construction of undertakings such as the Abbey Works of the Steel Company of Wales, Uskmouth power station, and the Nantgarw scheme of the National Coal Board. The resultant additional output and changes in traffic streams and the provision of railway works for the new undertakings presented many operating problems. In Merthyr, once served by five railway companies, iron, steel and coal previously represented the total of its endeavour. It was hard hit during the trade slump, but today produces a variety of commodities. Some 38,000 tons are handled through the goods shed compared with 19,000 in 1933.

Coal is still the greatest asset of South Wales, but there has been an almost complete reversal of coal traffic flow since the heyday of the industry. Before the war, the export market absorbed most of the production. Then only about 21 per cent of the coal was consigned to destinations within South Wales, compared with 46 per cent now. The allocated tonnage to English destinations, in 1938, was approximately 16 per cent, but is now 24 per cent. However, 32,000,000 tons of coal were railborne in 1938, but in 1953 only about 23,000,000. Even so, the tonnage of coal class traffic consigned to places outside, amounting to over 6,000,000 tons a year, is 13 per cent heavier; in consequence, a greater revenue results from the longer haul, compensating somewhat for the drop in total output.

The other basic industry is iron and steel, which produces 23 per cent of the steel ingot output of the country, and much pig iron. More than 4,000,000 tons of products, including 1,750,000 for England, are consigned annually by rail. Large quantities of coal, iron ore, limestone and other raw materials are needed for production. The Steel Company of Wales receives by rail at Port Talbot alone 24,000 tons of coal, about 14,000 tons of iron ore, 9,000 tons of scrap and 4,500 tons of limestone each week and consigns monthly up to 75,000 tons of coil, sheets, and plates. There are also the new complementary undertakings in West Wales, and many other large concerns such as those of Richard Thomas & Baldwins at Ebbw Vale, and Guest Keen & Baldwins and Guest Keen & Nettlefolds at Cardiff. Specially constructed wagons of 42-ton capacity have been evolved to convey hot strip coil from Abbey Works to the cold reduction plant at Trostre. The provision of 70-ton vehicles for transporting pickled coil from Abbey Works to the Llangyfelach cold reduction plant, now under construction, is being considered. A new type of container of 8-ton capacity has been introduced to carry dolomite from Taffs Well to the Abbey Works and to Ebbw Vale.

Agriculture is significant, as Carmarthenshire and Pembrokeshire yield much dairy produce. Fish, landed at Milford Haven is dispatched in train loads daily to London and the South of England. Of the South Wales seaside resorts some are places of residence for those who work in nearby towns, besides catering for holidaymakers. During the winter sporting events at Cardiff, Newport and Swansea cause heavy rail travel. At Queen Street, the Cardiff terminus for the Rhondda, Merthyr, Aberdare and Rhymney Valleys, 246 trains are dealt with on a normal weekday and 16,000 passengers detrain and entrain. On the main line, the South Wales-London services are among the best all-the-year-round revenue earning trains of the Region.

The South Wales Docks, which belonged to the Great Western Railway, are now a separate entity under the control of the British Transport Commission. Although their trade has diminished because of the fall in coal exports, the shipment traffic handled remains considerable.

The appointment by the Chief Regional Officer, as he then was, of a South Wales Area Officer, is cited by Mr. Swift as a recognition of the importance of the Area to the Western Region. His office co-ordinates inter-District matters, largely with those of the Operating and Commercial Departments in the Area, and maintains daily contact with Headquarters at Paddington. The centralised control by that office of mineral wagons in South Wales carries out inter-District adjustments in the dispositions of wagons and allocation of trains of coal empties from England, to ensure that the wagon requirements of the collieries and opencast coal railheads, which send up to 48,000 loaded wagons weekly, are met as far as the fluctuating daily resources permit.

The total rail revenue arising on the Region for 1952, was £68,000,000, to which South Wales contributed some £27,500,000. Of an originating Regional total of approximately 48,500,000 tons, 34,500,000 were attributable to the

Area. The figures for freight traffic alone, excluding coal, approximate to 48 per cent of 20,000,000 tons which arose in the Region that year. Similarly, with freight revenue, of nearly £28,750,000, £9,500,000 are estimated to have been earned within the three South Wales Districts.

The C.P.R. in 1953

AN expanding economy in which railway transport continues to play an increasingly important role in spite of growing impairment of the financial position of the railway industry emerges as one of the most significant and perplexing features of the business and industrial scene in Canada in 1953. A disturbing manifestation of this growing imbalance between the generally high level of economic activity and railway revenues, says Mr. W. A. Mather, President of the Canadian Pacific Railway, in his review of 1953, is the decline in net railway earnings recorded by the Canadian Pacific Railway during the past twelve months. Further increasing the difficulty of attracting on favourable terms the capital needed for the expansion and improvement of railway services and necessitating a decision to defer a part of the maintenance programme, this adverse trend in net earnings reflects the serious implications for railway transport in the national economy of a transport policy based on legislative and other restrictions inappropriate to modern competitive conditions.

Economic developments of the past twelve months lend a sense of even greater urgency to the problem of bringing the financial position of the railways into balance with that of other sections of the economy. Capital investment in industry, with the notable exceptions of transport, mining, petroleum and residential construction, has been relatively of less significance as a sustaining factor in the economy than expenditure on consumer goods and services. Defence expenditures, although maintained at a high level throughout 1953, are no longer regarded as an expansive factor in business and industry. Such circumstances suggest that the programme of capital investment planned by the Canadian Pacific Railway may be a factor of even greater importance than previously in sustaining the high level of economic wellbeing, as well as in terms of meeting the growing transport requirements of Canada. The Canadian Pacific Railway should be given the opportunity to achieve in its railway enterprise the greater financial stability needed to attract capital on favourable terms.

The factors which have restricted net rail earnings in 1953 to the unsatisfactorily low level of somewhat less than three per cent on investment are wage increases implemented during the year, growing lorry competition for high value freight traffic, and a decline in volume of traffic. General freight rate increases of seven per cent and nine per cent, which became effective early in 1953 by authority of the Board of Transport Commissioners, have failed to provide the expected level of net earnings because of the decline in traffic volume and a rise in operating costs. Recognising the necessity for exploring every possible solution of the increasingly acute financial problem of the railway industry, the Canadian Pacific applied, in July, 1952, to the Board of Transport Commissioners for the establishment of a " rate-base rate-of-return " formula to enable the company to earn a reasonable return on the net capital investment in its railway enterprise.

The fundamental problem, affecting not only the railways but the entire economy of Canada, however, still rests on the application by statute, to a substantial section of rail freight traffic, of rates which are the same today as in 1897. A statutory provision exempting so large a volume of traffic from bearing any share in increased transport costs, if extended indefinitely, cannot fail to prejudice the balanced economic growth essential to sound national development, and limit further the ability of Canadian railways to meet the nation's transport needs. Confident that recognition must ultimately be given to the necessity of bringing the financial requirements of transport into a more equitable relationship with those of other sections of an expanding economy, the company, during the past twelve months, has undertaken to provide new and improved services.

To improve and modernise trans-continental railway passenger services orders were placed during the year for streamlined, stainless-steel coaches, making up 15 complete trains of the most modern construction for service from Montreal and Toronto to Vancouver. Included in the order are 36 ultra-modern scenic-dome lounge-observation cars. Introduction of this new stock, beginning with the use of scenic-dome cars on the Vancouver-Calgary section in the coming summer will, on completion, mean that Canadian Pacific is operating a larger number of modern, streamline passenger units over longer distances than any other railway. The year 1953 was marked also by steps taken to improve and modernise secondary passenger services. Four self-propelled diesel railcars of latest design have been put in service in Quebec between Montreal and Mont Laurier, to serve the Laurentian resort area, and in Ontario between Toronto and Windsor-Detroit as well as between North Bay, Mattawa and Angliers. Experience with these units and their popularity with the public will determine whether additional self-propelled diesel cars will be ordered to supplement or improve secondary passenger services elsewhere on the Canadian Pacific system. Local passenger services in the growing residential suburbs of Montreal have been improved by placing in traffic new suburban coaches.

Standards of service and efficiency in the handling of freight traffic have improved as a result of the acquisition during 1953 of a large number of new box cars, longitudinal hopper wagons, motorcar wagons, refrigerator vans, covered hopper wagons, gondola cars, flat and tank wagons, and miscellaneous equipment. Diesel traction was extended to the Crow's Nest, Kootenay and Kettle Valley route between Medicine Hat and Vancouver, necessitating the establishment at a cost of about $1,000,000 of a diesel shop at Nelson, B.C. Delivery of 73 new diesel-electric locomotives during the year brought to 365 the number of diesels in operation.

The revenues from the operation of Canadian Pacific Steamships were adversely affected by reduced cargo carriage and the continuing low level of ocean freight rates. Steamship passenger traffic on the North Atlantic, although slightly lower than for the previous year, continued at a satisfactory level. The replacement of the *Empress of Canada*, destroyed by fire at Liverpool early in the year, by the purchase and refitting of the 19,400-ton *De Grasse*, renamed the *Empress of Australia*, enabled the company to meet without interruption the heavy passenger traffic of the Coronation period. The keel for a new passenger-cargo liner of 22,500 gross tons was laid at the yard of the Fairfield Shipbuilding & Engineering Co. Ltd. on the Clyde. Tenders have been called for a sister ship to the new vessel, to replace another of the older ships.

British Transport Commission Traffic Receipts

AGGREGATE traffic receipts of British Railways for the 52 weeks from December 29, 1952, to December 27, 1953, or roughly for the year 1953, at £415,088,000 were £19,202,000 over the total for the previous corresponding period. There were increases over the preceding year under all heads, the greatest rises, both proportionately and absolutely, being in mineral and coal class traffics, as might have been expected from the high coal and steel production figures of recent weeks. The aggregate for British Railways merchandise traffic, however, exceeds that for 1952 by less than the 5 per cent of the rate increase of December 1, 1952, which means lower tonnage originating or ton-miles or both, the last being readily visible in the trend figures shown up to and including November 29 in the latest series of *Transport Statistics*.

British Road Services ended the year some £2,500,000 up on the previous 52 weeks, receipts for all the four-week periods of 1953, except the first, having shown an increase over the corresponding weeks of the preceding year despite impending disposal of assets under the Transport Act, 1953. The London Transport aggregate was only slightly higher than for 1952, with a very slight rise in the case of the Underground. The British Transport Commission's provincial and Scottish road passenger undertakings' receipts ex-

ceeded the 1952 figure by £2,345,000, though this may not go far to offset increased operating costs Receipts from shipping services were slightly below last year's; because of the varying proportion of revenue derived in the several periods from passengers, cargo, and so on, there is no obvious explanation, and the French railway strike last summer would not seem to have seriously affected aggregate receipts from all the services.

—	Four weeks to December 27		Incr. or decr.	Aggregate for 52 weeks		Incr. or decr.
	1953	1952		1953	1952	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	8,318	8,280	+ 38	114,462	111,325	+ 3,137
Parcels, etc., by passenger train	3,006	2,843	+ 163	38,444	35,792	+ 2,652
Merchandise & livestock	8,191	7,839	+ 352	108,359	105,972	+ 2,387
Minerals	3,512	3,333	+ 179	45,169	41,866	+ 3,303
Coal & coke	8,452	7,849	+ 603	108,654	100,931	+ 7,723
Total British Railways ...	31,479	30,144	+ 1,335	415,088	395,886	+ 19,202
British Railways C. & D. ...	885	817	+ 68	11,630	11,222	+ 408
British Road Services ...	5,950	5,696	+ 254	79,019	76,450	+ 2,569
Road Passenger Transport : Provincial & Scottish ...	3,400	3,208	+ 192	49,811	47,466	+ 2,345
London Transport—						
Railways	1,464	1,415	+ 49	18,159	17,858	+ 301
Buses & coaches ...	3,146	2,744	+ 402	40,749	39,023	+ 1,726
Trolleybuses & trams ...	724	641	+ 83	9,200	9,411	− 211
Total London Transport	5,334	4,800	+ 534	68,108	66,292	+ 1,816
Ships...	663	650	+ 13	11,472	11,560	− 88
Inland Waterways : Carrying	69	69	Nil	903	900	+ 3
Total from passengers ...	17,284	16,519	+ 765	237,819	230,538	+ 7,281
Total from freight, parcels & mails	30,496	28,865	+ 1,631	398,212	379,238	+ 18,974
TOTAL FROM CARRYING ACTIVITIES ...	47,780	45,384	+ 2,396	636,031	609,776	+ 26,255

The Commission's receipts for the 52 weeks from its carrying activities at £636,031,000 showed a rise over the previous year of £26,255,000, of which the greater part, £18,974,000, was in respect of freight, parcels, and mails; of the latter amount some £17,000,000 was incurred by British Railways, and, as shown, not only through the rise in rates in December, 1952.

For Period 13 of 1953, the four weeks to December 27, which included part of the Christmas holiday traffic, British Railways passenger receipts slightly exceeded those of the previous year. As this period of 1952 ended on December 28, with a different incidence of Christmas Day, there is no true comparison.

PERCENTAGE VARIATION 1953 COMPARED WITH 1952

	Four weeks to December 27	52 weeks to December 27
British Railways—		
Passengers	+ 0·4	+ 2·8
Parcels	+ 5·7	+ 7·4
Merchandise & livestock	+ 4·4	+ 2·2
Minerals	+ 5·3	+ 7·8
Coal & coke	+ 7·6	+ 7·6
Total	+ 4·4	+ 4·8
C. & D. services	+ 8·3	+ 3·6
Ships	+ 2·0	− 0·7
British Road Services	+ 4·4	+ 3·3
Road Passenger Transport	+ 5·9	+ 4·9
London Transport—		
Railways	+ 3·4	+ 1·6
Buses & coaches	+14·6	+ 4·4
Trolleybuses & trams	+12·9	− 2·2
Total	+11·1	+ 2·7
Inland Waterways	—	+ 1·2
Aggregate	+ 5·2	+ 4·3

Design and Layout of Signalboxes

ALTHOUGH signals and signalling equipment generally always have attracted considerable attention and have frequently been the subject of debate the signalbox itself, from which our signals are still operated in the majority of cases in this country, has been seldom discussed and the paper read by Mr. Frank Horler, a Past President, before the Institution of Railway Signal Engineers on December 17 broke new ground in the proceedings of that body. The designation "signalbox" was not altogether to his liking, and he thought that "signal cabin" sounded better, as many would agree. No doubt the origin of it lies in the fact that the first shelters for pointsmen and the old policemen-signalmen were little better than sentry boxes and the word got transferred from one to the other as a matter of course.

"Signalbox" is and has long been the term recognised by rule books in Great Britain although "cabin" often is used in speaking and writing and has at times found application on signalbox nameboards while the London Transport Executive uses the term "signal cabin" in public notices not to trespass. Mr. Horler emphasised that the French expression *poste* had much to recommend it and this is so, although it is often applied to such things as apparatus locations where this is nothing resembling a signalbox as understood in this country.

The constructional details of signalboxes demand attention more than ever today, with the increasing use of relays and other comparatively intricate and delicate electrical apparatus, the regular functioning of which is of first importance. Originally signalboxes had to house practically nothing but the mechanical levers and leadaway, with later the block and the ordinary telegraph instruments and signal repeaters. As long as they were weatherproof and afforded a reasonable measure of comfort to the signalman little else called for much consideration. Certainly in the beginning nobody bothered much about appearances and on some railways, notably the old South Eastern, boxes were about the last word in hideousness. They were usually constructed entirely of timber, but soon some lines adopted the brick lower structure with timber upper works and even quite early some all brick structures appeared, to which a few railways eventually became attached. There was no necessity for the all-timber box to be ugly and some attempt was made to give it a certain amount of ornamentation and also to standardise details.

The old Midland Railway timber boxes were completely standardised and could be made up readily to any length required out of uniform parts and they had quite an agreeable appearance. The large lamp outside, with reflector, to throw a light on the passing engine and enable its number to be seen and recorded, part of the rules of the Midland block telegraph, was a peculiar feature of these boxes. In their case the locking frame was entirely above the floor, but on other railways the levers passed through it and this again affected the design.

Everywhere the custom at first was for the signalman to face the line, and this was indeed officially required at one time, but later the practice, now very general, of having him work with his back to the track was introduced. Only the simplest provision for amenities was made, although here again improvement gradually came about. A good view of the line was essential before there was any track circuiting or similar aids to safe working, and at times very high boxes were provided to secure that. Abroad also many designs of signalbox were to be found and in Germany particularly much care was early bestowed on creating structures of pleasing appearance and some handsome designs were seen.

With the coming of power signalling little difference was noticeable at first and only slowly were changes seen, as the amount of electrical equipment increased, with the addition of continuous track circuiting, not applied to some of the earlier installations. It then became necessary to make better arrangements for housing the relays, leading in the numerous electrical connections, laying out the wiring in the neatest, handiest, and most economical

manner and providing for fuse and switchboards, and other accessories. Accommodation had to be provided for accumulator batteries and, where thought desirable, stand-by generator equipment. As experience was gained improvements were effected and gradually some excellent designs of signalbox appeared and proved very satisfactory. More attention was given too to appearances and some very pleasing layouts were produced.

The process continued, and of late years, with both power and mechanical signalboxes, the latter today often incorporating quite an amount of electrical equipment, some excellent structures have been brought into service with every provision for the signalman's comfort and often good facilities for maintenance staff to take their meals and so on. Although the use of complete track circuiting makes the so-called "blind" signalbox possible in certain conditions, and a few have been constructed, as a rule it is found advantageous to afford a good lookout from the operating room.

Attention has been given also to providing adequate fire protection equipment, some forms of which necessitate additional emergency exits, the great amount of costly apparatus housed in modern power boxes rendering such imperative. At the same time much care is being bestowed on such details as window construction, lighting fittings, heating equipment, and the best types of floor and wall coverings to promote cleanliness and eliminate dust. Dust, which has an extraordinary power of finding its way inside well-covered devices, is especially objectionable where electrical apparatus, with its numerous contacts, is involved, and there are some who think that air conditioning should be applied generally to apparatus rooms and would be found to pay, in increasing appreciably the periods between regular overhauls.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of Correspondents)

Railway Centenaries

January 4

SIR,—In connection with the interesting centenary items in your issue of January 1, I should like to see it mentioned that the narrow gauge first entered Bristol in 1854, on May 29. This was the Midland company's line from Gloucester, built originally as a broad-gauge line ten years earlier by the Bristol & Gloucester Railway.

Yours faithfully,

G. A. NEWMAN

The Railway Club, 57, Fetter Lane, E.C.4

"Expresses" Ashore and Afloat

January 9

SIR,—Having now retired from the Navy I have recently enjoyed looking through a collection of old photographs and diaries amassed over some 36 years.

In front me is a very fine photograph of L.M.S.R. No. 5706 called *Express*, with the crest of H.M.S. *Express*, a destroyer, over her leading driving wheel. I was the Captain of the destroyer *Express* in 1935, and somehow we managed to get affiliated with the four British railways at the time of the Jubilee Review. We were quite new, and I felt that it would be a good idea if the *Express* afloat was associated in some way with her sisters ashore. So I wrote to all four Chief General Managers, and sent each a framed photograph of the ship signed by the officers. I believe there was a conference, over lunch, about my letter and the upshot of it was that the G.W.R. sent a special messenger on board on Jubilee Day at Spithead with a huge photo of the "Cheltenham Flyer," signed by the Board of Management. The L.N.E.R. sent the Assistant to the Chief General Manager, and his wife, with another enormous photo of the "Flying Scotsman"; and the L.M.S.R. decided to call one of their new engines *Express*, No. 5706, to which I have referred, and sent us a grand photo of her. We used to send the engine driver and his "winger" a Christmas Card, and we always got one back with good wishes. The Southern did very little except send us a number of unframed photos of engines; later Lord Kennet, who was a Director, said that if they had known I was Captain of the ship they would have done better.

I have one more engine in my study, the *Silver Link*. The *Express* was at West Hartlepool in 1936, and Mr. K. P. Walker, the Docks Manager, came with his wife to have tea with me and he saw I hadn't got the engine. He then telephoned his H.Q. and next day came the photo I have in my room; it is signed by Sir Ralph Wedgwood, Chief General Manager, L.N.E.R.

I believe my idea was the forerunner of the "Ship Adoption Scheme," only in this case we, the *Express*, adopted the railways. It had a far-reaching effect, not only in my ship's company, because it seemed to be an original idea and gave them pleasure and amusement, but also because, when, for instance, the G.W.R. chaps came to Portsmouth for Territorial training, they at once asked for and came on board "their" ship, and we looked after them.

The ship was in the Jubilee Review. She went with the fifth flotilla to the Middle East during the Abyssinian crisis; subsequently she played a great part in the Spanish Civil war evacuating refugees. She visited Newcastle and Hartlepool during bad times for the people in shipping and mining, and we did what we could on board to cheer them. I remember a party on board at Hartlepool, when Mr. and Mrs. Walker helped me, and we had a grand party of dock workers and railwaymen of all kinds. Finally she was torpedoed in the Channel, cut in half, and one half was saved, and later joined up to make into another whole and the Canadian Navy took her over, christened her by another name, and I have a snap of her being broken up after a long, honourable, and eventful career.

Yours faithfully,

CASPER S. B. SWINLEY

Lypiatt Hill House, near Stroud, Glos.

Rolling Stock Weight and Cost

January 3

SIR,—Referring to Mr. John Barclay's letter in your issue of January 1, I believe that the determining factor in passenger coach weight is the crushing force specified as maximum without permanent distortion, when applied between coach ends. This was only 80 tons in pre-nationalisation British stock, except in some Bulleid designs, and is now 200 tons in British Railways standard coaches, whereas the Swiss, and European international, standard is some 300 and the American 400 tons. A true comparison is between American-built stock in U.S.A. and the Swiss-built stock for Mexico, which meets A.A.R. strength standards.

As for cost, comparison apart from exports to an outside country is difficult because of rather artificial rates of exchange, but I suggest that Swiss costs are more truly converted at F18=£1 than the present F12=£1; the same applies to German Marks.

In any case there seems no doubt as to the economic superiority of lightweight, integral stock, and I can assure Mr. Barclay that the European passenger certainly likes it.

Yours faithfully,

JOHN RODGERS

"The Cottage," 132, Worrin Road, Shenfield, Essex

THE SCRAP HEAP

Hacksaw Opens Gates for Train

The 7.10 a.m. London connection from Mablethorpe left 40 min. late after the driver reversed a mile to borrow a hacksaw and cut the chain securing the locked level crossing gates. The keys had been put through the letter-box at the home of the crossing keeper, who was on holiday and not due back until 11 a.m., though expected back earlier by the station staff.—*From "The Daily Telegraph."*

Signalling Reform Advocated

I confess myself utterly at a loss to understand how it is that the railway authorities of this country are permitted to go on destroying life and property by a constant succession of accidents (so called) with seeming impunity. . . . There is no appearance, as far as we can judge, that these disasters are looked upon by those who are entrusted with the lives and property of their fellow-creatures, in any other light than as matters of course,—occurrences which are necessarily incident to the system of railway travelling; and at no distant period we may expect to see special provision made, in railway accounts, to meet the costs of human life, founded on data and calculations, similar in principle to those which provide for the destruction of rails and sleepers.

Those who have the power, and hold the public safety in their hands, know as well as I do, that there is no plan whereby the hourly contingencies to which a railway train is liable can be successfully met, so far as to prevent injury, but by an entire change of system in the use of the signal; so that instead of indicating, as they now do by their quiescent position, the absence of danger, they shall be made to convey, by a change of position, within the view of the driver, the actual safe condition of the road at the moment of the train's approach. The "affirmative signal" is, I again assert, the only means by which an engine ever should be permitted to enter a station. Nothing, in my opinion, prevents the adoption of this costless but most effective system, but the close attention to duty, which a manager would have to exact from the station masters; and, after all, this is no more than the duty for which they are appointed and paid, and without which the safe passage of a train is in itself an accident.—*From a letter by "Railway Director" to the December* 31, 1853, *issue of "The Manchester Guardian."*

Caterpillars on the Track

Big game has been known to hold up trains in East Africa—rhinos and giraffe are frequent train casualties—but interruption to train services due to caterpillars on the line is something new.

A plague of caterpillars which affected acres of pastureland north of Nairobi spread to the nearby railway lines where serried ranks of well-fed caterpillars caused engines to slip on the rails. For three days trains travelling up country from Nairobi were delayed near Dagoretti for anything up to two hours. To avoid further delays banking engines were employed at the rear of all up trains as a counter-caterpillar measure.

Memories of the M. & G.N. Joint

My reminiscences dating back to 1920 are many, but one may be permitted, perhaps, of the single platform station on a line which, in the summer, deals with more traffic on a Saturday than in the rest of the week put together. At this station there used to be a signalbox controlling signals from either direction along the single line. There was also only one telegraph bell. The procedure was for the porter-signalman, on hearing the bell, to run on to the platform and listen for the train to whistle. When he knew from which direction it was coming, he likewise knew which signals to pull off.—*From a letter to "The Times."*

Gently Does It

(*The British Transport Commission and the railway trade unions are conferring on wages and so on.*)

Though Christmas junketings are past
Goodwill is still essential;
They'll need it, too, to exorcise
Old Demon Differential.

Fortunately the enemy
At least is existential;
It's hard to grapple with a foe
That's mere inferential.

I knew a relative of his,
Who—(this is confidential)—
Got tied up to a calculus,
Equally pestilential.

Whichever way one looks at it
This much is evidential:
The whole set-up seems supercharged
With dynamite potential.

Be resolute, not rash, brave hearts,
Valiant, but reverential;
Tackle each step with fingers crossed,
Daring, but deferential.

For, in these things, the Parcae hold
A status presidential;
Their rulings are inclined to be
Painful and penitential.

So, be advised, and humbly seek
Assistance providential,
Or turn the whole lot over to
The man from the Prudential!

A. B.

British Railways Passenger Carriage Decoration

Lincoln Cathedral, one of two water colours by Jack Merriott, R I, recently reproduced as carriage panels by the Eastern Region: the other depicts Wivenhoe

OVERSEAS RAILWAY AFFAIRS

(From our Correspondents)

NEW ZEALAND

Tangiwai Accident

The express involved in the Tangiwai disaster which left Wellington for Auckland at 3 p.m. on Christmas Eve comprised a "K" class engine, five second-class and four first-class carriages, a guard's van and a postal van. The engine driver and fireman perished, but the guard was in one of the rear carriages when the accident occurred.

Immediately after the accident Railway Department engineers began an inquiry into the collapse of the bridge. The General Manager, Mr. H. C. Lusty, said that their investigations were quite apart from any public inquiry. While it was not possible to give an opinion with certainty, he thought the investigations would prove that one or both of the two piers that collapsed had gone when the train crossed.

After inspecting the scene of the accident the Prime Minister at once organised relief and other urgent methods. Mr. Lusty and members of the Railways Commission were with him and emergency plans were promptly put into operation. The morning after the disaster the reconstruction of the demolished bridge at Tangiwai began. Work was maintained day and night and it was expected that the new bridge would be ready for traffic within 10 days of the disaster. Trains were diverted over another route through the Taranaki District which adds some hours to the journey time between Wellington and Auckland.

The Tangiwai disaster was the third worst in New Zealand history, the worst being the Hawkes Bay earthquake, in 1931, when 255 lost their lives. Serious railway accidents have included those at Ongarue in 1923 when an express ran into a slip and 15 were killed and 30 injured, and in 1943 at Hyde when 21 were killed and 37 injured in a derailment.

SOUTH AUSTRALIA

Second Phase of Gauge Widening

The original authorisation for the gauge conversion in the south-east was from Wolseley through Mount Gambier to Millicent and from Naracoorte to Kingston. The first and most important conversion (Wolseley - Mount Gambier) is now accomplished. The second phase, from Mount Gambier to Millicent, 30 miles to the north-west, was started on September 9 last when the first set of broad-gauge lines was laid near the junction of the branch with the main line.

Under an agreement on the standardisation of gauges the Commonwealth Government approved project orders covering the whole of the South Eastern Division, comprising the lines from Wolseley to Beachport, Naracoorte to Kingston and Wandilo to Glencoe. The Glencoe branch leaves the main line at Wandilo, about ten miles from Mount Gambier, and is nine miles long. A narrow-gauge mixed train works from Mount Gambier once a week.

Passenger services on the Beachport line consist of a daily train in both directions four times a week. The line also carries considerable goods traffic. The Naracoorte-Kingston branch also has a four-day-a-week service. It is 52 miles long. There has been a proposal for a deep-sea port at Cape Jaffa near Kingston. This would probably result in a considerable increase in traffic.

New Radium Hill Line Opened

The South Australian Railways have opened a 12-mile branch line from Cutana, on the main line from Adelaide to Broken Hill, to Radium Hill. The first 140 miles of the Broken Hill line, from Adelaide to Terowie, are 5 ft. 3 in. gauge, but the line north of Terowie is 3 ft. 6 in. gauge, to which gauge the Radium Hill branch has been laid. Uranium ore deposits worked at Radium Hill are now conveyed by rail direct to Port Pirie.

Passenger service began between Adelaide and Radium Hill on November 2 last. A special coach was attached to the Adelaide-Broken Hill express. On arrival at Cutana at 4.55 a.m. it was detached from the express and coupled to a freight train due to arrive at Radium Hill at 6.20 a.m. Regular trains leave Adelaide for Radium Hill at 8 p.m. on Tuesdays and 9.35 p.h. on Fridays.

UNITED STATES

Coal Trains of 13,000 tons

On the Norfolk & Western Railway, coal trains made up to 175 bogie wagons are now standard practice over the 112 miles of the principal main line between Williamson, West Virginia, and Portsmouth, Ohio. The maximum rostered load of these trains is 14,500 tons (all but 13,000 long tons). The N. & W.R. is the one major American railway which continues to use steam power exclusively, and these trains are powered by heavy articulated locomotives. They are only exceeded in length by the 180-wagon trains of the Duluth, Missabe & Iron Range Railway, which bring iron ore down from the Mesabi Mountains for shipment at Duluth, Lake Superior, but on that journey the gradient is with the load, and the steam locomotives used have only to haul the empties against the grade. The Norfolk & Western line mentioned, on the other hand, is comparatively level.

Acceleration of Santa Fe "Chief"

As a reply to the new Chicago & North Western-Union Pacific "Challenger" streamline trains, the Atchison, Topeka & Santa Fe Railway accelerated from January 10 its streamline "Chief" by 5½ hr. westbound and 4 hr. 20 min. eastbound to a run of 39½ hr. in each direction between Chicago and Los Angeles. The Santa Fe has a shorter route than that of its principal competitor—2,225 miles westbound and 2,227 miles eastbound—but it is the more difficult of the two, with four summit levels ranging from 7,000 to 7,573 ft. to be negotiated, and gradients up to a maximum of 1 in 28½.

Hitherto the "Chief" has been composed of Pullman sleeping, dining, and lounge accommodation only, but it now includes reclining chair cars for coach passengers also, and the special service charge of $10 has been abolished. The $5 charge has been abolished also on the all-coach "El Capitan," which continues to run on its schedule of 39½ hr. westbound and 39¾ hr. eastbound; and the $15 charge on the all-Pullman "Super-Chief" has been halved, while this train is accelerated from 39¾ to 39½ hr. in each direction. As a result of these changes, the Santa Fe now offers three daily departures in each direction by streamline trains, five taking 39½ hr. for the journey and the remaining one 39¾ hr.

ARGENTINA

Argentine-built Wagons

The firm of Bautista Buriasco e Hijos has recently completed the first units corresponding to an order for 2,000 45-ton broad-gauge wagons, under construction at its works at María Juana, Province of Santa Fé.

Free Meals on Trains

The San Martin Railway is to serve free meals to passengers travelling in Western Argentina in its principal diesel trains to meet the competition of airlines which serve free meals to their passengers.

PORTUGAL

Lisbon-Oporto Air-Conditioned Service

The Portuguese Railways have introduced a fast first-class only service between Lisbon and Oporto, operating, during the winter, a daily return service plus a thrice-weekly return trip. The daily service leaves Lisbon at 9.50 a.m. and reaches Oporto at 2 p.m.; the return working leaves Oporto at 7.33 p.m. and arrives in Lisbon (Rossio) at 11.45 p.m. These timings of 4 hr. 10 min. down and 4 hr. 12 min. up over the 213 miles, give an end-to-end average of 51 m.p.h. inclusive of three stops, at Campanha, Aveiro and Coimbra. The thrice-weekly trip operates on Tuesdays, Thursdays and Saturdays, leaving Oporto at 9.15 and reaching Lisbon (Rossio) at 1.35 p.m. after making the same intermediate stops as above and

also one at Pampilhosa. This second service operates daily during the summer.

These services are covered by three Fiat 960 b.h.p. diesel-mechanical triple-car trains, fully air conditioned and having 174 seats on an empty weight of 153 tons. Each end car has an O.M.-Saurer 12-cylinder horizontal engine below the car floor driving an O.M.-Fiat five-speed gearbox with cardan shafts thence to the two axles of one bogie. A top speed of 75 m.p.h. is allowed. These three trains are similar to the five air-conditioned sets supplied by Fiat to the Spanish National Railways during 1953.

ITALY

Lines in Calabria to be Closed

Professor Visentini, chairman of a committee appointed by the Italian Minister of Transport in 1951 to prepare a plan for transport co-ordination, has submitted a report recommending the closure of about 120 miles of secondary railways in Calabria and their replacement by bus services. The plan is linked with the major scheme for the economic re-organisation of Southern Italy.

SWITZERLAND

Stansstad—Engelberg Railway

The Stansstad-Engelberg Railway is an electric metre-gauge line with no physical connection with the rest of the Swiss railway system; Stansstad can be reached only by boat from Lucerne or by road. The railway is now to be linked with the metre-gauge Brunig (Lucerne-Interlaken) electric line of the Federal Railways and reconstructed.

The new line would skirt the Lake of Lucerne to the west of Stansstad, and join the Lucerne-Interlaken line at Hergiswil, five miles south of Lucerne. Stansstad and Engelberg stations would be rebuilt. The severe gradient making rack-and-pinion working necessary between Grafenort and Engelberg, approximately three miles, is to be retained. Four new motor coaches would be acquired. The expenditure would amount to fr.14,900,000. Federal and local grants would make up fr.11,000,000.

FRANCE

Estimates for 1954

French National Railways estimate that total expenses for 1954 will reach fr. 606,800 million (nearly £620,000,000), of which fr. 14,200 million (£14,400,000) represent a payment to the State under the permanent way maintenance agreement of 1952. Receipts are expected to reach fr. 447,000 million (£455,000,000) —fr. 117,300 million from passenger traffic, fr. 285,000 million from freight traffic, and fr. 44,700 million from other sources. These estimated receipts exclude the payments made each year to the S.N.C.F. as compensation for rates reduced by Governmental order, as indemnity for staff pensions and in respect of permanent way maintenance. The S.N.C.F. asked the Government to make a net allocation to the railways of fr. 145,600 million (£148,000,000), being the difference between receipts and expenditure minus the fr. 14,200 million payable in any case to the State.

Reduced Allocation

In presenting its budget to the National Assembly the Ministry of Public Works & Transport reduced the allocation to a gross of fr. 142,500 million less the previously mentioned fr. 14,200 million, a net figure of fr. 128,300 million; the fr. 142,500 million figure represented fr. 64,300 million due to the S.N.C.F. under the permanent way maintenance agreement, fr. 28,200 million as indemnities for compulsorily reduced rates and fr. 50,000 million to cover the residual deficit. The Ministry's budget was rejected by the National Assembly, one of the reasons for rejection being the discrepancy between the Ministry's allocation and the sum requested by the S.N.C.F. A large majority of the National Assembly apparently considered that the reduced figure would lead to a later supplementary estimate, a practice that has become prevalent in recent years.

The original estimates for 1953, for example, were expenses fr. 565,700 million and receipts fr. 441,500 million. The final figures are now expected to be fr. 570,500 million and fr. 420,100 million respectively, an increase in the deficit of fr. 26,200 million (£27,000,000). The total payment to the S.N.C.F. by the State in respect of 1953 will be approximately fr. 150,400 million less the payment due under the parmanent way maintenance agreement of fr. 11,400 million, a net of fr. 139,000 million £142,000,000). The figure of fr. 150,400 million is made up of fr. 60,600 million paid by the State under the permanent way maintenance agreement, fr. 28,000 million as indemnity for compulsorily reduced rates and a residual deficit of fr. 61,800 million.

Paris Metro

Passengers originating on the Paris Metro during the first six months of the year numbered 543,750,000, a decrease of nearly 13,000,000 in comparison with the corresponding period of 1952. The 1953 figure was, however, 145,000,000 higher than that for 1938. Receipts for the January-June period this year were fr. 9,389 million (£9,500,000), compared with fr. 9,581 million (£9,700,000) in 1952.

BELGIUM

Improved Communication with Holland

Railcars now run every hour between Antwerp and Roosendaal. At Antwerp they connect with electric trains to Brussels, and at Roosendaal, taking into account the time needed for the Dutch Customs examination, with direct trains to Amsterdam and Tilburg.

NORWAY

Bergen-Voss Electrification

Electric working is expected to begin between Bergen and Voss on June 10. At present short-distance trains are allowed about three hours for the 107 km., but this time will be reduced by up to an hour. There will be four local trains each way daily instead of three.

Diesel Railcar Working in Greece

Photo] [*A. Ea·le Edwards*

Fiat double-engined 360-h.p. diesel-mechanical railcar equipped with buffet, Hellenic State Railways; two of these cars with a trailer interposed work on main-line services

Rail-Road Agreement in Italy

Co-ordination of passenger services

(By a Correspondent)

SINCE the war, the Italian State Railways, like most European railway administrations, have suffered severely from road competition, particularly with passenger traffic. At the end of 1951 it was reported that the number of bus routes in Italy had increased from 4,000 in 1939 to 7,000, and during the same period route-km. operated rose from 90,000 to 400,000 and passenger-km. increased sevenfold.

When the war ended in Europe, the Italian State Railways found themselves at a severe disadvantage. Track, rolling stock, and other facilities had sustained heavy war damage, and despite praiseworthy reconstruction efforts, several years elapsed before prewar efficiency could be attained. In the meantime, the road passenger transport industry made the most of its opportunity, and motorcoach services became widely established throughout Italy.

Railway-Operated Road Services

Various measures were adopted by the Italian State Railways to minimise the effect of this competition. Under an Act of 1931 they were given the power, within certain defined limits, of replacing railway services by road services. This power was little used before the war, but the postwar period has seen the establishment of railway-operated coach services to replace or augment railway passenger services on a number of lines, including Bari-Cosenza (190 miles), Rome-Civitavecchia (50 miles), and San Benedetto del Tronto-Pescara (37 miles).

Soon after the war when the potential demand for long distance motorcoach tours became evident and the danger was seen of this traffic falling completely into the hands of private road transport undertakings, the Italian State Railways decided, with the agreement of the Government, to form the Compagnia Italiana Auto-servizi Turistici (C.I.A.T.) to operate motorcoach tours. Of its share capital, one third is held by the Istituto Nazionale Trasporti (I.N.T.), a road haulage subsidiary of the Italian State Railways, one third by the Compagnia Italiana di Turismo (C.I.T.), in which the Italian State Railways hold a large proportion of the shares, and the remaining third by eight large road transport undertakings, the F.I.A.T company and two banks. C.I.A.T. not only runs tours in Italy itself, but also co-operates with the Europabus undertaking, referred to in our March 6, 1953, issue, in the provision of international tours.

C.I.A.T. does not enjoy a monopoly of Italian motorcoach tours. It is, however, given the first opportunity of operating such services, both internal and international, and can decide whether to operate them itself, have them run by transport undertakings working on its behalf, or leave their operation to private undertakings.

On October 15, 1953, an agreement was signed in Rome between the Italian State Railways, the National Association of Road Motor Services (operators working under contract) and the National Association of Road Motor Service Operators. This agreement, designed to co-ordinate road and rail passenger services in the national interest, is valid in the first instance for six years and will be automatically renewed if one or more of the contracting parties has not given notice to terminate the agreement at least six months before its date of expiry.

The agreement aims to maintain the status quo of road passenger services operated in direct competition with railway services on routes more or less parallel with the railway route. Only where public interest is clearly affected will new road services of this type be authorised. Alterations to existing routes, variations in service frequency or charges, and so on, can be put forward only after prior agreement with the Italian State Railways.

A Central Joint Committee has been set up with a number of clearly defined functions, whose implementation will assist the smooth running and development of the agreement. The committee consists of three representatives of the associations of road motor services, three representatives of the Italian State Railways and three representatives of the road traffic inspection service; one representative of the latter will be Chairman. The principal function of the Joint Central Committee will be to adjudicate on applications which are made to it by the Italian State Railways for the revision of road passenger services.

Under the agreement, the Italian State Railways have the right to apply for revision of road passenger services operated on routes running more or less parallel to the railway where the route-mileage exceeds 40 (50 route-miles for services south of the Rome-Pescara railway line). No application for revision can be entertained in respect of services of a lower route-mileage. The object of this section of the agreement is to avoid uneconomic duplication of rail and road services.

Local Committees

To assist the Central Joint Committee to arrive at a decision, each application will first be considered by a local committee nominated by the Central Committee. Membership of the local committee will include one each of the representatives of the associations of road motor services and of the Italian State Railways on the Central Committee, a local representative of the association of road motor services operating under contract, and a local representative of the road traffic inspection service who will act as Chairman. The local committee will make recommendations to the Central Committee. Where it is decided that a particular service should be eliminated, the date of the coming into force of this decision must be fixed by the Central Committee.

Other duties of the Central Joint Committee include the overcoming of difficulties arising where existing services are altered, the co-ordination of road and rail fares' scales, and the nomination of road transport undertakings to operate road services in replacement of withdrawn railway services.

The terms of the agreement provide that the Italian State Railways shall not themselves operate directly newly-created road motor services in replacement of, or in addition to, railways services. Such road services shall be entrusted to private undertakings nominated by the Central Committee, which will also decide the terms of the contract. Where a road service is cancelled and subsequently reinstated, preference must be given to the private undertaking which was operating the service before its cancellation.

Fares Scale

It has been agreed that the fares' scales of regular road passenger services operating parallel to the railway shall be gradually increased to the level of third-class railway fares. It is also laid down that, in general, the minimum fares charged by operators of tourist services shall be equal to second-class railway fares except where the Central Committee rules that special circumstances exist. In this connection it should be noted that fares on the Italian State Railways are the cheapest in Europe; at the existing rate of exchange, ordinary third-class single fares are approximately 1d. a mile in comparison with 1·75d. a mile in Great Britain and 2·46d. a mile in France.

The agreement provides that separate agreements can be concluded between the Italian State Railways and individual operators of road passenger services with the aim of eliminating competitive fares.

Other matters dealt with under the road-rail agreement include the co-ordination of timetables, the development of joint rail-road services, the sale of tickets, the use of railway stations by road transport undertakings, the publication of road passenger timetables at railway stations and the linking by road services of railway stations and outlying towns.

Talgo Trains in Spain

Details of performance during the first two years of service

(By a Correspondent)

BECAUSE of the low centre of gravity of Talgo trains it is claimed that higher speeds are safely practicable on curved track than with ordinary passenger stock, and the Talgo train service of the Spanish National Railways (R.E.N.F.E.) between Madrid and the French frontier at Irun is timed at a considerably higher speed than any other passenger train over the same route. A description of the trains was given in our issue of March 18, 1949.

In the original timetable there was one start to stop booking of 48 min. over the 52·3 miles southbound from Burgos to Venta de Banos (65·3 m.p.h.), and another of 79 min. over the 79·4 miles from Avila to Valladolid (60·4 m.p.h.), though these have since been eased in the interests of passengers' comfort, as the permanent way with flat bottom rails is stated to weigh only 86½ lb. per yd. and still suffers to some extent from arrears of maintenance, more especially in the matter of sleeper replacement. The Bo-Bo diesel-electric locomotives used are geared for a maximum speed of 105 m.p.h., and have been tested in Spain up to 92 m.p.h., but the normal limit on the Talgo train runs is 75 m.p.h., compared with 68 m.p.h. with steam-hauled trains.

Long Layover

When the service was first introduced two complete sets were acquired from the American Car & Foundry Company and the trains ran three days a week each way between Madrid and Irun. A third set of cars was then obtained, with a third diesel-electric locomotive, but as yet the service is only four days a week, as in view of the experimental nature of the equipment, a layover of 48 hr. at Madrid is thought desirable after each round trip to permit thorough inspection and servicing. Fuelling is carried out at Madrid, 600 gal. for the return journey.

Northbound the train runs through across the frontier to Hendaye, in France, 397·4 miles from Madrid and about a mile beyond Irun. Southbound it starts at Irun, and covers 396·2 miles. The overall time to Irun northbound is 8½ hr., including 10 intermediate stops; southbound the time from Irun to Madrid is 9 hr. 20 min. These call for running averages of 48·8 and 45·9 m.p.h.

Gradients are very severe over certain sections. The first 61 miles out of Madrid, to La Canada, are a continuous climb, from a level of 2,036 ft. to a summit level of 4,460 ft., largely on a gradient of about 1 in 100, but as steep in parts as 1 in 50. From the summit there is a 12-mile descent, much of which is at 1 in 60-70, but the gradient then eases, and the line is on easy grades for roughly 150 miles from Sanchadrian to Barrios de Colina. From here there is a descent of 42 miles, much of it at 1 in 100-110, to Miranda, and a final descent to the coast of 23 miles also has some miles at 1 in 62-66. From Barrios to San Sebastian the total descent in 143 miles is 3,055 ft. The line is double throughout, save for 43 miles between Miranda and Alsasua.

Composition of Train

The normal formation of the Talgo train is diesel locomotive and thirteen units, in the following order: two baggage units, two passenger, one equipment unit, five passenger, a second equipment unit, one passenger, and the observation lounge. Each equipment unit contains a kitchen, lavatories, and air conditioning equipment. One equipment unit is provided to each sixteen-seat passenger unit, and passengers are served with meals at their seats. Catering is performed by the Cie Internationale des Wagons-Lits. The number of passenger units is varied as required, up to a maximum of sixteen, providing seating for a maximum of 176 passengers.

The train crew comprises driver and mate, travelling mechanic, conductor, guard, ticket collector, and a restaurant car staff of seven, one chef, and two waiters to each kitchen and a supervisor.

During 1952 the Talgo trains achieved 97·7 per cent punctual arrivals.

The average number of passengers carried on the throughout journey to and from Irun has been 110 during the first two years of service. The average number of passengers per trip has been 153, each travelling an average of 284 miles. The train is used to a considerable extent between Madrid and Miranda del Ebro by passengers who change there for and from Bilbao. By a questionnaire it has been ascertained that, while the Talgo trains have taken over a certain amount of patronage from other trains on this route, new patronage also has been attracted, in particular from those who hitherto had travelled by air. Including supplementary fares the rates for the use of this train, which is second class only, are about 30 per cent above the normal second class fares. Roughly 70 per cent of the passengers on the Talgo trains are served with meals.

Running Costs

As the trains are still in the experimental stage, it is hard to arrive at precise running costs, as allowance has to be made for research of various kinds that has been in progress, and also for the layover at Madrid while experience is being gained. But a figure of 42 pesetas per km. as the overall operating charge, including all operating expenses, or about 11s. 6d. a mile, of which roughly 12 per cent is debitable to the maintenance of the locomotive and sixteen units. These operating costs are considerably lower than the general average for passenger train working in Spain. The running and brake gear is regarded as easier to maintain than that of standard stock.

The trains have been involved in two mishaps only, and in neither case did the cars overturn or suffer any structural damage, nor did any passengers or members of the crew suffer any injury. This experience has satisfied the builders that the structural strength of the stock is sufficient to meet all reasonable demands. While considerably higher speeds than those at present maintained would be easily possible with the locomotive power available, and also practicable with safety, as already mentioned, in the interest of smooth riding over the light track there is no intention at present to reduce the running times.

The Talgo equipment, at first owned by the firm of Patentes Talgo, S.A., has since been taken over by the R.E.N.F.E., whose staff work the trains. The equipment is maintained by Patentes Talgo in R.E.N.F.E. shops at Madrid.

"DECCAN QUEEN" COLLISION.—At the time of the accident in Bombay on December 29, in which the "Deccan Queen" ran into a stationary electric suburban train in Bombay, as reported in our issue of January 8, the suburban train is stated to have been protected by a three-aspect automatic colour light signal, which had failed, and the driver of the "Deccan Queen" to have been acting under the "Stop and proceed" rule, but to have been travelling too fast to be able to avoid a collision.

ALUMINIUM LIMITED: NEW FABRICATING ENTERPRISE IN SPAIN.—Progress in construction of a fabricating plant for aluminium in Alicante is announced by Aluminium Limited. The new plant is owned by Aluminio Iberico S.A., a company controlled jointly by Aluminium Limited of Canada, Manufacturas Metalicas Madrilenes S.A. of Madrid, and a group of Spanish banks and individuals. It is being designed to fabricate 18,000-20,000 tons of aluminium sheet, plate, and extrusions, and aluminium steel-reinforced power transmission cables products a year from ingots to be supplied by smelting subsidiaries of Aluminium Limited. The Spanish partners in Manufacturas Metalicas Madrilenes S.A. are planning a plant nearby for the construction of railway freight and passenger vehicles, besides bus bodies, ship superstructures, and so on, using aluminium alloy mill shapes fabricated by Aluminio Iberico S.A.

Diesel-Mechanical Shunting Engines

Development of 0-4-0 *and* 0-6-0 *type locomotives for 2-ft. gauge and upwards by W. G. Bagnall Limited*

LOCOMOTIVES of many types have been built by W. G. Bagnall, Limited, during the past 80 years. The types include main-line steam locomotives and shunting locomotives, including steam, fireless and also diesel. The latest developments undertaken by the firm are diesel mechanical shunters of the 0-4-0, and 0-6-0 type, designed primarily for industrial shunting in steel works, docks and harbours, factories, mines, and similar installations equipped with this type of railway.

The principal dimensions of the two types of locomotives are given in the accompanying tables. These apply to 4-ft. 8½-in. gauge types, but designs are available for gauges of 2 ft. and upwards.

0-4-0 TYPE

Range, h.p.	75	100	150
Weight in working order, tons ...	18	20	24
Wheelbase, "A"	5 ft. 6 in.	5 ft. 6 in.	6 ft.
Length over buffer beams, "B" ...	19 ft.	19 ft.	19 ft. 6 in.
Overall width, "C"	8 ft. 11 in.	8 ft. 11 in.	8 ft. 11 in.
,, height, "D"	11 ft. 3 in.	11 ft. 3 in.	11 ft. 9 in.
Diameter of wheels	3 ft.	3 ft.	3 ft. 4 in.
Minimum radius curve	50 ft.	50 ft.	58 ft.
Fuel tank capacity, gals.	100	100	150
Speed in—			
1st gear, m.p.h.	3·25	3·25	3·6
2nd gear, m.p.h.	5·5	5·5	6·3
3rd gear, m.p.h.	8·25	8·25	9·8
4th gear, m.p.h.	13·2	13·2	14·7
Tractive effort in—			
1st gear, lb. ...	6,930	9,230	12,500
2nd gear, lb. ...	4,090	5,450	7,140
3rd gear, lb. ...	2,730	3,640	4,600
4th gear, lb. ...	1,710	2,275	3,060

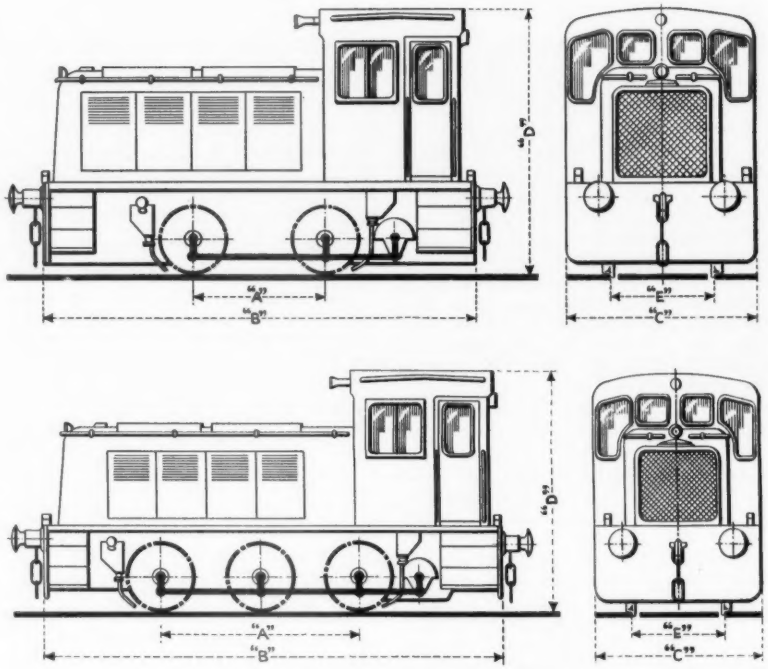
0-6-0 TYPE

Range h.p.	150	200	240
Weight in working order, tons ...	27	30	33
Wheelbase, "A"	10 ft.	10 ft.	10 ft.
Length over buffer beams, "B" ...	22 ft.	22 ft. 6 in.	23 ft.
Overall width, "C"	8 ft. 11 in.	8 ft. 11 in.	8 ft. 11 in.
,, height, "D"	11 ft. 9 in.	11 ft. 9 in.	11 ft. 9 in.
Diameter of wheels	3 ft. 4 in.	3 ft. 4 in.	3 ft. 6 in.
Minimum radius curve	170 ft.	170 ft.	170 ft.
Fuel tank capacity, gals.	150	250	250
Speed in—			
1st gear, m.p.h.	3·6	3·6	4·2
2nd gear, m.p.h.	6·3	6·3	7·25
3rd gear, m.p.h.	9·8	9·4	10·9
4th gear, m.p.h.	14·7	14·7	16·9
Tractive effort in—			
1st gear, lb. ...	12,500	16,700	17,400
2nd gear, lb. ...	7,140	9,530	9,930
3rd gear, lb. ...	4,600	6,390	6,600
4th gear ...	3,060	4,080	4,260

Features of Design

The locomotives are powered by McLaren series, vertical, direct injection, cold-starting diesel engines. The engine drives through a Vulcan-Sinclair fluid traction coupling and a flexible coupling of the Layrub type, to a constant mesh gearbox giving four speed changes which are effected by four oil-operated cone type couplings.

The reversing mechanism consists of bevel gears, and reversing is effected by means of a simple dog clutch. The final drive is from a jackshaft with flycranks connected to the locomotive wheels by coupling rods. Frames, superstructure, wheels and axles, brakes, and drawing and buffing gear, and other mechanical parts are designed in accordance with modern locomotive practice, and all materials are to the relevant British Standard specifications.



Principal dimensions of the two types

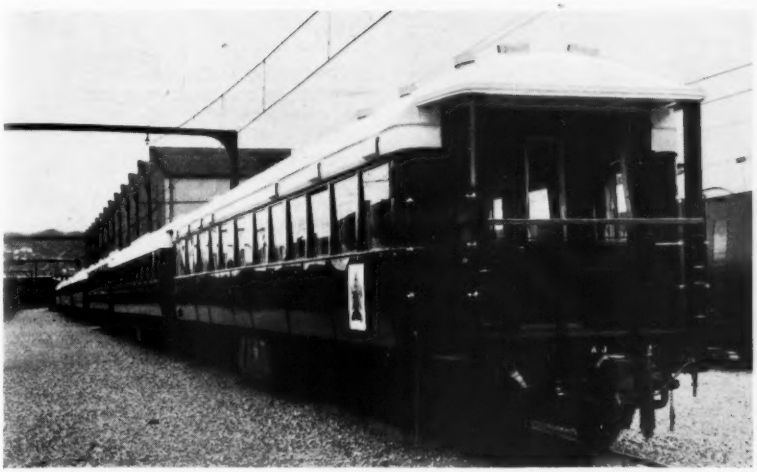
CLOSING OF KILLAMARSH WEST STATION.—The Eastern Region announces that on February 1 Killamarsh West Station will be closed. Alternative rail facilities for passenger, parcels and freight train traffic are available at Killamarsh Central. Killamarsh West Station is situated on the former Midland line between Rotherham and Chesterfield, which was opened on May 11, 1840.

GLASS FABRICS LIMITED—Turner & Newall Limited has acquired for cash the controlling interest in Glass Fabrics Limited, of Dungannon, Northern Ireland. Glass Fabrics Limited will continue to manufacture its range of glass textile products but will work in close co-operation with Turner Bros. Asbestos Co. Ltd., of Rochdale, an asbestos textile subsidiary of Turner & Newell Limited. On January 1 Turner Bros. Asbestos Co. Ltd. assumed responsibility for the sales of all products manufactured by Glass Fabrics Limited. This new interest of Turner & Newall Limited arises from the fact that in many applications asbestos and glass textiles are largely complementary. Many of the manufacturing, technical, and marketing problems encountered in asbestos and glass textiles are similar. This is stated to be particularly relevant to the plastics industry, which promises to be an important user of both asbestos and glass products in the production of high strength mouldings.

HEAVY-DUTY FLANGING PRESS FOR ITALY.—Fielding & Platt Limited has exported a 950-ton vertical four-column flanging press to Officine Meccaniche Ferroviarie Pistoiesi, of Pistoia, Italy. The press is of the self-contained type with top and bottom fixed tables and a centre moving table all of fabricated steel construction. The main press cylinder and ram, and the drawback cylinders and rams are mounted in the top table. An ejector ram is situated in the bottom table of the press. The hydraulic power is provided by five high-pressure radial pumps, using oil as the pressure medium, operating at a working pressure of 3,000 lb. p.s.i. and will be installed at Pistoia for use in the production of railway equipment. The power of main ram and ejector ram is 950 tons and 100 tons respectively. The maximum and minimum daylight is 10 ft. 3 in. and 5 ft. 11 in. respectively.

Royal Trains in New Zealand

Accommodation for tours of North and South Islands



Eight-coach Royal train, showing Royal coach with its observation platform in foreground

THE Queen and the Duke of Edinburgh are using two Royal trains, one in the North Island and the other in the South Island, in the course of their tour of New Zealand. They travelled in the North Island train on January 7-8 from Hastings on the east coast to New Plymouth on the west, staying overnight at Palmerston North.

The South Island train is almost identical. It will be used when the Royal party travels on January 18 from Greymouth to Christchurch; and on January 25 from Timaru to Dunedin.

The livery is crimson lake, with ivory roof and black undergear. The Royal Arms are displayed on each side of the Queen's coach, at the lounge end. The train comprises eight carriages, including the two Viceregal coaches for the Royal party. Other vehicles include the Ministerial car, the coach of the General Manager of Railways, and coaches to accommodate police, press representatives and other attendants. The Royal coach, the last one of the train, was built by the Railways for the visit of the Duke of Gloucester in 1934. It has an observation platform at the rear to enable the Queen and the Duke to appear in person as the train leaves wayside halts.

Accommodation of Royal Coach

The Royal coach comprises a lounge, two staterooms, a shower and toilet room, accommodation for the use of the Queen's lady-in-waiting and the Duke's aide-de-camp, and a kitchen.

The interior of the lounge has been decorated in contemporary style, in harmoniously blended pastel shades. The side and end walls between the lounge and the observation platform are panelled with striated plywood finished in pale yellow. The wall between the lounge and the Queen's stateroom is flush-panelled, and finished in light grey. The door here is of natural oak, finished with a new form of plastic polish. The window frames and skirting are grey and the ceiling is a shade of peach. The floor of the lounge, and the floor space throughout the Royal coach, are covered from wall to wall with a dove-grey Axminster carpet. Four easy chairs, upholstered with foam rubber and covered with grey and white check material of woven wool, have a novel form of armrest, and were designed specially for the Royal lounge.

At one end is a furniture unit, which is a combination radio, cocktail cabinet, and writing desk. This unit also incorporates a folding table; by the addition of a companion table four diners may be accommodated. Matching dining chairs are upholstered with foam rubber, covered with a red and white check woollen fabric. Two small wall tables each carry a standard lamp and an ash-tray fashioned from New Zealand honeysuckle wood.

Concealed lighting along each side of the lounge wall above the windows gives an even, diffused light over the curve of the ceiling, and downward. On the wall above the radio is a painting by a New Zealand artist. Two red spun-aluminium reading lamps on either side give a brilliant touch of colour, and are adjustable to any position desired.

Layout of Staterooms

The two staterooms are similar in lay-out and furnishings. Like the lounge, the walls are painted in a combination of light grey and pale primrose. The day bed is upholstered in beige and white woollen material woven into a design of diminishing squares; the cushions are crimson, piped with white. The dressing-table, of natural oak finished with plastic polish, has dull gold concave disc handles; this unit is combined with a porcelain washbasin. The shower-room, between the two staterooms, has a terrazzo floor, and a green

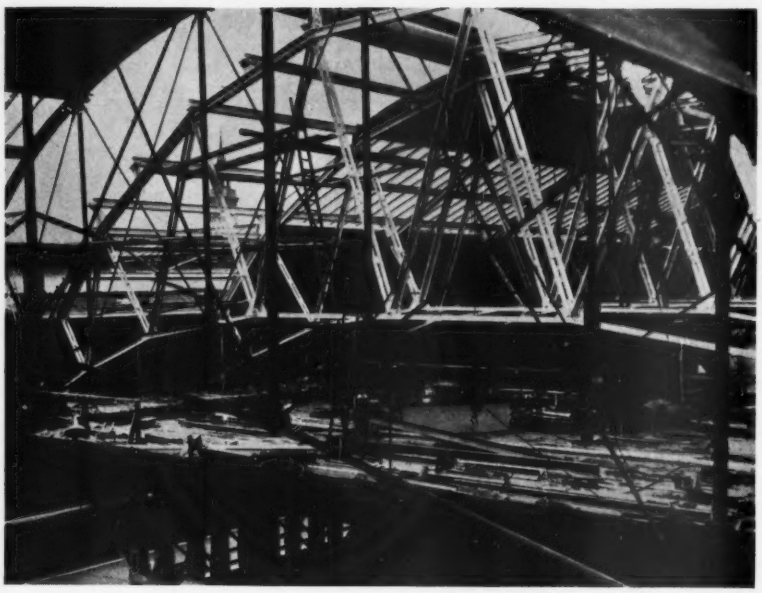
(*Continued on page* 70)

The lounge in the Royal coach

XUM

Repairs to London Bridge Station Roof

Use of aluminium alloy instead of steel trusses



Foreground: Old wrought iron trusses. Background: New aluminium trusses

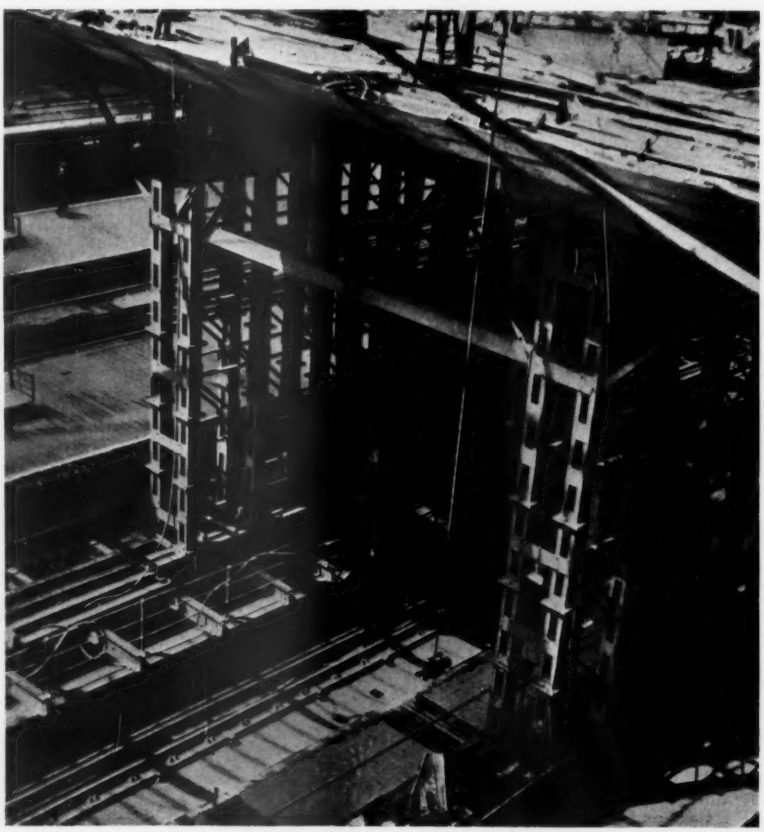
EXTENSIVE repairs have recently been completed on the war-damaged roof of London Bridge Station, Southern Region, British Railways, necessitating the renewal of a length of approximately 200 ft. of main roof at the east end of the station. The work was completed in six months.

Peak periods at London Bridge entail the handling of some 80,000 passengers per hour, and it was therefore essential that the work of taking down the old roof and constructing the new should be carried out without interference to the public. To enable this to be done, a working stage was erected on towers well above the platforms, and from this all assembly and erection work was carried out.

Economy of Aluminium Construction

The use of aluminium alloy in the fabrication of the new roof trusses effected an economy in that costly erection gantries were rendered unnecessary. It was possible to make use of the old trusses for raising the new and, when these were in position, they served as gantries for lowering the old to the ground for breaking up.

Aluminium alloy is being increasingly used in construction work of all kinds—an outstanding example in recent years was the Dome of Discovery on the Festival of Britain exhibition site. It combines strength with lightness and, although present costs compared with steel are more or less equal, the tendency is for aluminium to become a more economic proposition for large-span roof trusses. It is as yet too early to express an opinion on the durable qualities of aluminium alloy for this purpose, although experience so far gives reason to believe that it will prove at least as satisfactory in service as other media previously used. In the case of the work on the London Bridge roof, considerable economies of both men and materials were effected by the use of the old trusses, which, as previously stated, was made possible only by the relative lightness of the new material.



Military trestling working stage used for erection of aluminium trusses

Royal Trains in New Zealand

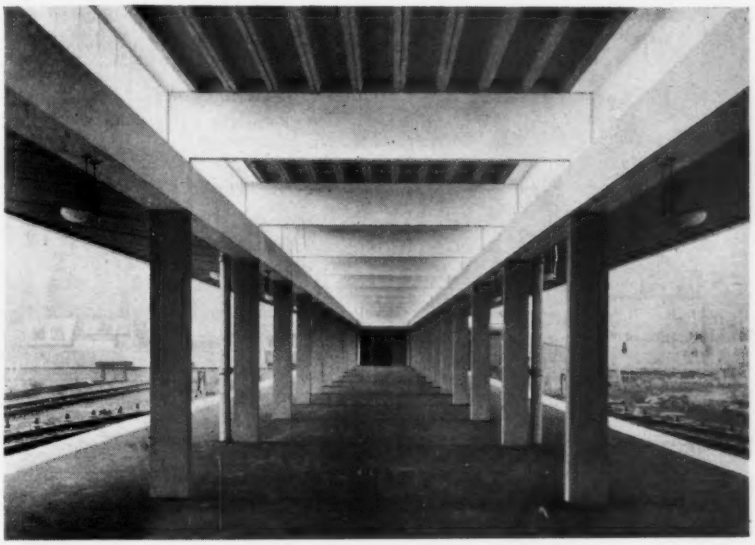
(*Concluded from page* 69)

plastic shower curtain with a motif of tropical fish and seaweed.

The cabins for the Queen's lady-in-waiting and the Duke's aide-de-camp have walls of light wedgewood blue with grey skirtings. The flush doors are in light rimu, a grained New Zealand wood. The seats are covered with a maroon and white checked material. Each cabin has its own porcelain hand-basin, with hot and cold running water.

Rebuilt Portishead Station, Western Region

Use of local stone to harmonise with surroundings



Colonnade of the new 600 ft. platform

A NEW Western Region station at Portishead, Somerset, about 400 yd. from the old station, was opened for traffic on January 4. Its construction was made necessary by the British Electricity Authority plan for the extensive development of its power station adjoining the railway premises.

Portishead, 11¼ miles from Bristol Temple Meads, is the terminus of a branch which leaves the Bristol-Taunton main line at Parson Street Junction and runs through the Avon Gorge. The new site is opposite the junction of High Street and Nore Road at Portishead, near the town centre. Preservation of the character of the town within the bounds of modern structural dictates has been the aim of the Architect to the Civil Engineer of the Western Region. Direct relationship with existing buildings has been achieved by the use of local limestone, in constrast to clean concrete forms. Reinforced concrete and stone infill and coloured panels form the main construction of the station building.

The entrance to the station, with parcels office and yard on one side and car park on the other has been set back about 50 ft. from the main road. The booking hall, entered through glass swing doors, gives direct access to the platform, with the ticket, stationmaster's and parcels office adjoining. On the platform are two waiting rooms with extensive seating accommodation. An unconventional method of construction has been used for the roof canopy which runs the full 600 ft. length of the platform. It is formed of post tensioned beams and prestressed decking slabs, prefabricated to facilitate speedy and economical erection and achieve a high standard finish.

Piling for Platform Canopy

The low bearing capacity of the ground on which the new station is built has necessitated 56-40 ft. piles to support the platform canopy. These piles carry the main, 38-ft. long, cross-beams which cantilever a third of their span in each direction and are stressed with 48 strands of high tensile wire to a strain of 70 tons per sq. in.

Included in the scheme is a new signalbox of unconventional design, situated about 200 yd. from the station. The operating floor of the box is fitted with a continuous sliding window giving unobstructed visibility on three sides.

Entrance with swing doors opening into booking hall

New signalbox with sliding windows on three sides

Special attention has been given to the interior lighting, which by low intensity spot lights is directed on to the instruments and track diagram, and diffused lighting for the remainder of the box.

In addition, to prevent glare and avoid back reflection during night operations, the main window has been canted at an angle of 10 deg., throwing all reflected glare up to the ceiling.

Aluminium Roofing

The roof is of insulated aluminium sheeting, supported on a framework of welded steel, from which is suspended an acoustic ceiling. This ceiling will absorb excess noise invariably found in a manually-operated signalbox and give added thermal insulation.

Throughout the scheme every effort has been made to incorporate high quality finishes, and furniture and lighting fixtures are all of contemporary design. The colour schemes, and texture of the surface materials are of a type not usually associated with railway buildings in this country. The construction was carried out by Charles Brand & Son Ltd.

New Station Architecture and Motive Power in Tasmania

Platform of the new terminus at Hobart, Tasmanian Government Railways, with, on right, train formed of 153-b.h.p. twin-car articulated diesel sets with Drewry power bogies. (See editorial article in our November 20, 1953, issue)

REHABILITATION AT LONGSIGHT CARRIAGE SIDINGS.—Work has begun on a £20,000 scheme for up-to-date staff amenities, offices, and workshops at British Railways (London Midland Region) Longsight South End carriage sidings, near Manchester. Two new buildings will replace the existing accommodation. One of these will house the various workshops besides locker rooms, drying rooms, lavatories, and a rest room for female staff; offices and cloakrooms for clerical and supervisory staff, stores, and cycle accommodation will be in the other building. The work is expected to take about ten months to complete. A total of some 200 staff is employed in the sidings, including 65 women cleaners.

Increasing Line Capacity Through the Appalachians

Five miles of Norfolk & Western main line relocated to ease gradients and curves: C.T.C. and reversible working

(Left) Cutting for new alignment at Powhatan protected from rock falls by high detector fencing. Old alignment on right

TO take full advantage of the $13,000,000 Elkhorn Tunnel project, which was described in *The Railway Gazette* of April 14, 1950, the Norfolk & Western Railway administration has since spent a further $3,500,000 on the improvement of the adjacent five miles of its Norfolk, Virginia, to Cincinnati main line between Lick Branch and North Fork. This improvement is a relocation reducing the curvature and gradient, appreciably increasing the capacity of the line.

Despite the new alignment deviating from the old nowhere by more than 300 ft., it eliminated eleven of the original 23 curves in these five miles, as well as eight bridges. On the old line the sharpest curve had a radius of 6¼ ch., and 15 of the curves were 12 ch. or sharper; 11 of the remaining 12 curves are 19 ch. or easier and the other is 14½ ch. radius. The former ruling gradient was 1 in 66 uncompensated for curvature, which on the sharper curves was equivalent to 1 in 50 compensated.

Diversion of Streams

Both the old and new alignments closely follow Elkhorn Creek, and the old one crossed it eight times in these five miles. Six of these crossings have now been eliminated by diversions of the channel, and the new route crosses it only twice, on reinforced concrete box-culverts, one of three spans. Heavy retaining-walls were necessary, mainly to support formation at the stream diversions; in them some 22,000 sq. ft. of pre-cast concrete cribbing was used.

In all, nearly 1,000,000 cu. yd. of excavation, mostly sandstone and shale, were necessary on this construction work, and considerable blasting and shovel-work was required. The average cutting slope is ¾ to 1 and the deepest cut is 110 ft. In some places old coal-workings were encountered and there, 40 ft. wide benches were made on the cutting slopes to protect the tracks from this unstable soil. Tall detector fences were also erected in all deep cuttings to protect trains from falling rocks and other material. Altogether some 8,500 cu. ft. of this fencing has been erected, and in some places is in six tiers, one above the other.

The embankments are 47 ft. wide across the shoulders to allow for a 16 ft. cess width from each track centre line, the tracks being 14 ft. 6 in. apart; the side slopes are 1½ to 1.

Soil Disposal

Some difficulty was experienced in the disposal of the cutting soil not required for the fills, within reasonable distance from excavation. Nearby coal companies, however, allowed some of the soil to be dumped in hollows on their land, but in one instance three houses had to be raised and four other buildings moved to provide dumping sites.

Other incidental works included the removal of a church and eight houses, and the rebuilding of a ninth to make way for the new line. In one place at Powhatan U.S. Highway 52 had to be diverted and Elkhorn Creek also was then diverted to run along the former roadway and so enable the creek-bed to be filled in for the new railway formation. Moreover, five of the 16 miles of 12-in. locomotive service water supply

(*Continued on page* 74)

Hillside cut away at Powhatan facilitating realignment of main road (left) Elkhorn Creek, and railway. Old line followed line of poles in foreground

XUM

New Operating Control Room at Southampton Central, Southern Region

Supervision from district office of some 400 route-miles of main and secondary lines

View of control room showing stepped floor with area controller's desks and diagrams on far side

AS a war emergency measure the Southampton District Operating Control Office of the Southern Railway was installed, with all its associated telephone apparatus, in protected accommodation. After the war it became necessary to find a normal situation for it, but this was difficult because of the lack of suitable space, bearing in mind the need to be near the District Office and the requirements of town planning in the area.

Eventually it was found possible to devise a scheme whereby a new control room could be constructed in the best possible position for it, namely as part of the main District Office, adjoining Central Station. This has been accomplished by building out from the existing building at first floor level on steel pillars, without encroaching on the space required at ground level.

Accommodation for Controllers

The Control Room is constructed with three rows of desks on three floor levels, the lowest level accommodating the area controllers who have diagrams of their respective areas on the wall immediately in front of them. The room is well lit with roof and side windows, and there is also alternative electric and gas for artificial lighting. Special attention has been paid to reducing noise in view of the fact that the staff is constantly engaged in telephone conversation with signalboxes and outlying offices and staff. The telephone and ventilating apparatus are installed in rooms built in the loft. The telephone system is Standard Telephone equipment as used for the control network throughout the Region.

The Southampton District covers 414 route miles from Worting Junction (near Basingstoke), Butts Junction (Alton), and Cosham Junction (near Portsmouth) to Southampton, Fawley, Lymington, Swanage and Dorchester (via Bournemouth and via Ringwood), and to Alderbury Junction (near Salisbury). It also covers the former Didcot, Newbury & Southampton line up to Enborne Junction (Newbury) and the former Somerset & Dorset line (Bath excepted).

The traffic handled is most varied in character, including heavy holiday and residential traffic, particularly to and from Bournemouth; cross-country services via Oxford and Reading, via Westbury and Salisbury, and via Bath and Templecombe; Southampton boat trains; and a diversity of freight traffic, largely from Southampton and district. There are many junctions where connections are made, and some of the lines are single, with severe gradients, over which heavy trains are often worked in summer.

The Southampton Control room is the fourth new one to be brought into use on the Southern Region; the others are Waterloo (Headquarters), Orpington (London East), and Redhill (London Central). The new premises for Control at Woking (London West) are nearly ready for occupation.

Increasing Line Capacity through the Appalachians

(*Concluded from page* 73)

pipeline had to be re-sited and a 100,000-gal. tank moved a mile.

The realigned tracks were laid temporarily on 12 in. of cinder ballast under the sleepers, which are of creosoted timber. About a year hence they will be raised on crushed stone ballast. In the eastbound or uphill track there are about 1·9 miles of 140 lb. and 3·1 miles of 132-lb. rails; the westbound track is of 132-lb. material throughout. The double-shoulder soleplates on the straights and easier curves measure 8 in. × 13½ in., and those which are used on curves of 43 ch. and over measure 8 in. × 18 in.

This section of line is equipped with centralised traffic control and each track is signalled for running in both directions.

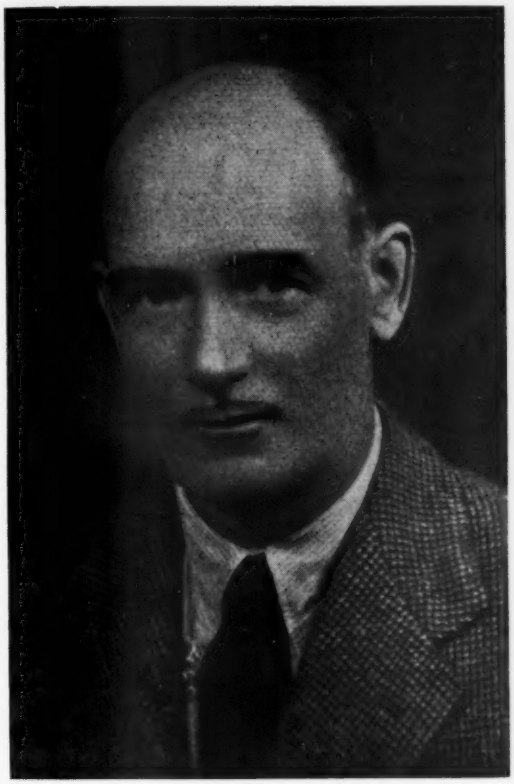
"DUKE OF YORK" COLLISION.—The master of the British Railways *Duke of York*, damaged in the North Sea on her voyage from the Hook of Holland to Harwich on May 6, in a collision with the American steamer *Haiti Victory*, said at the resumed inquest at Harwich on January 6, on five of the victims of the collision that, after being warned of fog patches, he saw a ship coming towards him very fast. Visibility was about a quarter of a mile. When he saw the ship on the port bow he put the *Duke of York's* engines hard astern and gave three short blasts on the whistle. The collision occurred about half a minute afterwards. The jury returned verdicts of accidental death. Addressing the jury, the coroner said no evidence had been forthcoming which would entitle them to apportion the blame.

AIRCRAFT HIT BY TRAIN IN AUSTRIA.—A report from Vienna states that on January 5 the "Blauer Blitz" Vienna to Graz diesel train ran into a Soviet jet aircraft near Theresienfeld, in Lower Austria. Russian soldiers were towing the aircraft across the railway line where there was no official crossing and failed to notice the approaching train. No one was injured, but the engine of the train and the aircraft were damaged. A Russian commission is investigating the incident.

RAILWAY NEWS SECTION

PERSONAL

Lord Glentoran, Northern Ireland Minister of Commerce, has appointed Mr. George Henry Porter, M.B.E., to be a member of the Ulster Transport Authority Board until March 31, 1956. Mr. Porter also becomes a member of the Great Northern Railway Board. He replaces the late Mr. S. M'Coubrey on both bodies as trade union representative for the North.



Mr. C. J. Hall

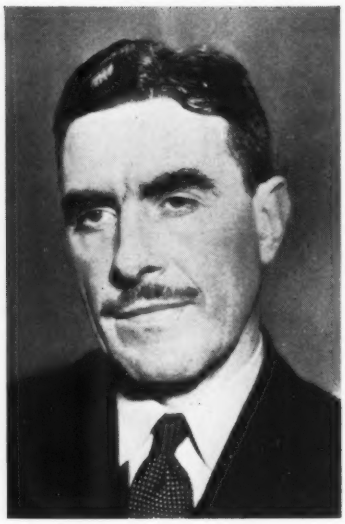
Appointed Chief Mechanical Engineer, Iraqi State Railways

The late Mr. J. C. Patteson

European General Manager, Canadian Pacific Railway, 1946-53

Mr. C. J. Hall, M.I.Loco.E., A.M.Inst.T., Deputy Chief Mechanical Engineer, Iraqi State Railways, who, as recorded in our January 1 issue, has been appointed Chief Mechanical Engineer of the Iraqi State Railways, commenced his training with the Great Western Railway at Swindon in 1915, and, during the 1914-18 war, served from 1917 to 1919 with the R.F.C. and R.A.F. as a pilot. After leaving the service he studied at Loughborough College until 1922 when he obtained a Diploma in mechanical and civil engineering. He then returned to the G.W.R. at Swindon and completed his training after which he joined the drawing office staff. In 1925 Mr. Hall joined the Indian State Railways and proceeded to India on appointment as Assistant Transportation Superintendent in the Movements Branch of the Great Indian Peninsula Railway. Later he was employed in the Power Branch as a Locomotive, Carriage & Wagon Assistant. After eight years on the G.I.P. he was transferred to the East Indian Railway and placed on Special Duty. Subsequently he was Assistant Deputy General Manager, Organisation, Works Manager, Carriage & Wagon Works, Lucknow, Deputy Chief Mechanical Engineer, Locomotive Workshops, Jamalpore, Deputy Chief Mechanical Engineer, Running Headquarters, and Deputy Chief Mechanical Engineer, Works & Maintenance. While at Jamalpore he became Chairman of the Municipality and, during the 1939-45 war, he served on the Calcutta Technical Tribunal for the selection of personnel for the armed forces. Mr. Hall retired voluntarily from the Indian State Railways at partition in December, 1947, and joined the Iraqi State Railways as Deputy Chief Mechanical Engineer in 1948.

We regret to record the death in Paris on January 10, at the age of 57, of Mr. John Coleridge Patteson, C.M.G., European General Manager for the Canadian Pacific Railway Company. He was on a brief business tour of the Continent and was taken to the American Hospital in Paris on Friday, January 8. Mr. Patteson, as chief of the Canadian Pacific in Europe, represented not only the railway itself, but also its subsidiary steamship and airline companies. He was born in London, Ontario, in December, 1896, and was educated at Ridley College, St. Catherines, Ontario, and Royal Military College, Kingston, Ontario. He enlisted with the Canadian Field Artillery in the 1914-18 war, and served in Europe as a Captain. He joined the Canadian Pacific in New York in 1923 and won rapid promotion which took him to Philadelphia and Chicago before his move to London in February, 1936, as Assistant to the European General Manager, the late Sir George McLaren Brown. When the latter retired during the same year, Mr. Patteson was appointed European Manager. From 1940 until the autumn of 1944 he was on loan from the company to the Ministry of Supply, where he was Director General, Supply Service. For these services he was awarded the C.M.G. On October 1, 1944, he returned to his office as the company's European Manager and was appointed European General Manager on January 1, 1946. Among the important and varied tasks which have come to Mr. Patteson in his post have been the arrangements for the trans-Atlantic journeys of members of the Royal Family: the 1939 tour of the King and Queen, and the tour of the present Queen, as Princess Elizabeth, with the Duke of Edinburgh in 1951. On returning to the company after the war, he set about the reorganisation of the passenger and freight steamship services. First came the new fleet of fast Beaver cargo-liners, replacing the fleet of five lost during the war; then the Empress passenger ships which had to undergo the long job of reconversion after their trooping duties. By 1950 both fleets were complete and in regular service.

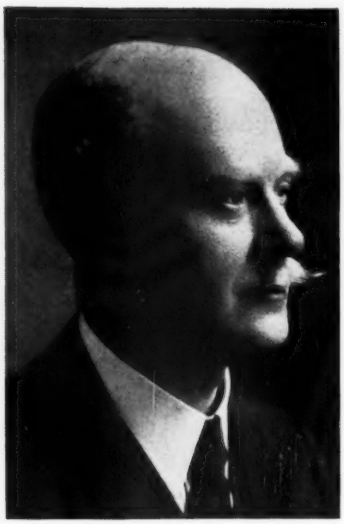


Mr. E. R. Williams

Appointed District Passenger Superintendent, Sheffield, Eastern Region, British Railways

Mr. H. Davies

Elected a Director, W. G. Bagnall Limited



The late Mr. John Murray

Assistant Chief General Superintendent, L.M.S.R. 1927-32

Mr. E. R. Williams, M.B.E., who has been appointed District Passenger Superintendent, Sheffield, Eastern Region, British Railways, with effect from December 28, 1953, includes in his jurisdiction, in addition to Sheffield, the towns of Barnsley, Chesterfield, Doncaster, Mexborough, Newark, Penistone, Retford, Rotherham and Worksop. Mr. Williams, who was educated at Cardiff High School, University College, Cardiff, and Jesus College, Oxford, joined the L.N.E.R., in September, 1934, at Loughborough. After obtaining experience at different stations in the old Southern Area of the L.N.E.R., including Sheffield, he was appointed a Relief Stationmaster in the Stratford district in 1937. He became Assistant to the District Goods & Passenger Manager, Peterborough, in 1938. As a member of the Supplementary Reserve, Mr. Williams was mobilised on September 1, 1939, and served with the B.E.F. in France, at the War Office, in Ulster, North Africa, Italy and Austria. He was awarded the M.B.E. in 1943 for services in North Africa, and, as an A.Q.M.G. (M), he was successively Port Commandant at Algiers, Bone and Ancona. On demobilisation in December 1945, Mr. Williams became Goods Agent at Chelmsford, and was appointed Assistant to the District Operating Superintendent at Stratford in 1948. He became Civil Defence Officer, Eastern Region, in 1949. In 1950 he went to France as Assistant General Agent, an appointment which he has just left to come to Sheffield. He is a Major (Honorary Lieutenant-Colonel) in the Regular Army Reserve of Officers, and was recently awarded the Emergency Reserve Decoration with First Clasp (supplement to the *London Gazette* dated November 3). While in Paris Mr. Williams was Deputy Chairman of the Paris Branch of the British Legion.

Mr. S. M. Khurshid, who, as recorded in our April 17, 1953, issue, has been providing liaison between the Pakistan railway administration and the various provincial Governments of Pakistan as Officer on Special Duty (Food), has now been appointed Liaison Officer between the Pakistan and Indian Railways. His new duties will embrace the exchange of service records of thousands of railway employees who opted for service in the other Dominion at the time of Partition six years ago. A photograph and biographical details of Mr. Khurshid appeared in our April 17 issue.

Mr. H. Davies, M.I.Loco.E., A.M.I.I.A., has been elected a Director of W. G. Bagnall Limited, locomotive builders of Stafford. Mr. Davies has been General Manager of Bagnalls since 1947. He commenced his apprenticeship in the locomotive industry with Kerr Stuart & Co., Ltd., in 1918. In 1926 he joined Bagnalls as an estimator and draughtsman. Two years later he joined Kerr Stuart and subsequently worked with Sir W. G. Armstrong Whitworth & Co., Ltd., the Air Ministry and in the London office of Babcock & Wilcox, Ltd., before returning to Bagnalls in 1940 as Chief Estimator & Personal Assistant to the Managing Director.

We regret to record the death on January 11, at the age of 82, of Mr. John Murray, O.B.E., who was Assistant Chief General Superintendent, London Midland & Scottish Railway from 1927 until his retirement in 1932, when he was appointed Sheriff to the County of Brecon for 1943. Mr. Murray began his railway career as a junior clerk in the Superintendent's Department of the former Midland Railway at Brecon, and, after obtaining experience at several stations, he was appointed Stationmaster in 1893, and District Traffic Inspector for South Wales in 1899. Mr. Murray was appointed Assistant to the District Superintendent at Bristol in 1906, and, in the next year, he was called to headquarters at Derby, where he was engaged under Sir Cecil Paget in the establishment of the control system of train working on the Midland Railway. He became Superintendent of Freight Trains in 1911, which position he held until 1923, when he was appointed Assistant General Superintendent (Midland Division), L.M.S.R. In 1924, Mr. Murray was made Outdoor Assistant to the Chief General Superintendent, and, in 1927, he became Assistant Chief General Superintendent. He was appointed an Officer of the Order of the British Empire in 1920 for his services in connection with transport during the war of 1914-18. He represented his company on the National Wages Board from 1927 to 1932. Mr. Murray's great-grandfather, Mr. Alexander Sutherland, was a contractor for the construction of the Gloucester & Dean Forest Railway (authorised in 1846); and his grandfather, a second Alexander Sutherland, received his training as an engineer under I. K. Brunel, and carried out a number of important contracts in South Wales. His father, Mr. Alexander Murray, carried out construction work on the Highland & Caledonian Railways and later served the Midland Railway from 1877 until his retirement in 1909. Mr. John Murray's son, Mr. Donald Murray, who is now Executive Officer (Mineral Traffic), British Transport Commission, filled the same position under the Railway Executive—he was formerly with the London & North Eastern Railway.

Memorial Service for Rail Crash Victims

A memorial service for those who lost their lives in the railway accident at Tangiwai, New Zealand, on Christmas Eve, was held in Westminster Abbey on Friday, January 8. Relatives of British victims attended the service, which was conducted by the Dean of Westminster, assisted by the Precentor. The address was given by the Rt. Rev. G. V. Gerard, Assistant Bishop of Sheffield and formerly Bishop of Waiapu, and the lesson was read by the High Commissioner for New Zealand. About a thousand people attended the service, including representatives of transport and industry.

Mr. F. F. Hixson, C.B.E., M.I.C.E., Representative in Peru for the Peruvian Corporation Limited, who, as recorded in our January 1 issue, will retire in June, was born in Swanage on May 13, 1881, and was educated at a private boarding school. In 1897 he commenced his engineering career in London with Mowlen & Co. Ltd. Mr. Hixson left England for Cape Town and Johannesburg in 1903, where he was employed as Assistant Engineer on Tramways, Road Construction & Public Works. He remained in South Africa until late 1907, after which he returned to this country to work in Manchester and London. In 1911 he went to Buenos Aires and worked for

a few months on special work with the Central Railway of Argentine, following which he was engaged for nearly four years on the Central Railway of Uruguay as an engineer on the construction of a railway between "Tres Arboles" and "Piedra Sola," subsequently being in charge of the reconstruction of bridges and other general maintenance work of railways. Mr. Hixson went to La Paz, Bolivia, at the end of 1915 to take charge of the construction of a railway into La Paz for the Antofagasta Bolivia Railway, and also the construction of a small branch from Kenko to the Alto. In 1918 he joined the Peruvian Corporation, serving 15 years as Chief Engineer, and three years as General Manager of the Central Railway, and, during the last 17 years, as Representative of the Peruvian Corporation in charge of all their Railways in Peru and Bolivia, including the Lake Steamers crossing Lake Titicaca. Mr. Hixson was awarded the C.B.E. in 1942.

Mr. J. A. Fargher, who has been acting as Railways Commissioner, South Australian Government Railways, since the death of Mr. R. H. Chapman last May, was confirmed in his position on October 22.

We regret to record the death in Rosario, Argentina, at the age of 67, of Mr. Sidney M. C. Ball, formerly Locomotive Controller of the Central Argentine Railway.

Mr. J. N. Kiek has been appointed Managing Director of the Rhodesia Railways Trust.

Mr. J. L. Irvine, Chairman of Williamson, Balfour y Cia, S.A., of Santiago, has been elected to the board of the Taltal Railway Company.

Mr. W. P. Lester, Motive Power Department, British Transport Commission, has been appointed Coal Supplies Officer, Waterloo, *vice* Mr. H. C. Routledge, retired.

Mr. S. O. Screen, Acting Assistant Divisional Operating Superintendent, Manchester, London Midland Region, British Railways, has now been appointed Assistant Divisional Operating Superintendent, Manchester. From January, 1949, until October, 1953, when he became Acting Assistant Divisional Operating Superintendent, Manchester, Mr. Screen was District Operating Superintendent (Western), Manchester.

Major J. R. H. Harley, D.L., J.P., who is a representative of local authorities, has been appointed a member of the Central Transport Consultative Committee for Great Britain in place of Sir Robert Pattinson, D.L., J.P., who has resigned.

Mr. Arthur Broomhead, a local Director of Thos. Firth & John Brown Ltd. since 1952, has been appointed a Director of the company.

The following staff changes, taking effect from January 1, have been announced by Northern Aluminium Co. Ltd.'s Foundry & Forge, Middlemore Road, Handsworth, Birmingham :—

Mr. F. Howitt relinquishes the position of Technical Superintendent & Deputy Manager on being transferred to a sister company, Aluminum Company of Canada Limited, Montreal. Mr. S. Wilding is appointed Production Manager, being succeeded as Works Engineer by Mr. D. A. Ellis. Mr. A. R. Martin assumes the full responsibilities of Chief Metallurgist.

Mr. Frank Taylor, Chairman of Taylor Woodrow Limited, has been elected Chairman of the export group for the constructional industries for 1954.

Mr. A. Healey is retiring from his position of Executive Director of Dunlop Rubber Co. Ltd. He has been with the Dunlop group for 38 years and was elected a Director in 1942.

Mr. James F. Clark, Vice-President in charge of Finance, American Car & Foundry Company, has been elected a member of the Board.

Mr. Richard P. Connette, Assistant to the President, American Car & Foundry Company, has been appointed Assistant Vice-President.

We regret to record the death on December 22, at the age of 56, of Mr. C. H. Nunn, A.M.I.E.E., Manager of the Transformer Works of the General Electric Co. Ltd.

Mr. R. Bradbury has been appointed Manager, Alexandria office, Thos. Cook & Son Limited. Mr. R. Woodward has been appointed Manager of Cook's Baghdad office.

Mr. W. H. Tait, Technical Director of the Glacier Metal Co. Ltd., retired from the board on December 31. He will continue to serve the company in the technical field.

Mr. Maurice A. Crane, M.I.Mech.E., M.I.Loco.E., who has been with the Company for 12 years, has been appointed London Manager of Beyer, Peacock & Co. Ltd., with effect from January 1, 1954.

Mr. B. A. Lewis has been appointed Midlands Manager, Saml. Denison & Son Ltd. An office has been opened at the White House, 111, New Street, Birmingham 2. Telephone No.: Midlands 3931. Telegrams: Weigh, Birmingham.

Sir Alexander H. Maxwell, K.C.M.G., Chairman of the British Travel & Holidays Association, is leaving this country on January 16 for an extensive tour of the United States and Canada during which, as in previous years, he hopes to be able to assess travel prospects from North America. He will return in March.

Mr. W. Gilmour Smith, Chairman of W. Gilmour Smith & Co. Ltd., left London on January 5, on a business visit to railway headquarters in Spain, Greece, Turkey, Pakistan, India and Ceylon. He will be out of the country until February 13.

We regret to record the death on January 3, in Johannesburg, of Mr. E. H. Tustain, Chairman & Managing Director of Abtus Limited. As recorded in our November 20 issue, Mr. Tustain left Southampton on November 19 on a business tour of S. Africa, S. and N. Rhodesia, and Kenya. The funeral will take place today (Friday) at Brookwood Cemetery at 11.30 a.m.

Mr. Ranald J. Harvey, Senior Partner of the firm of Ranald J. Harvey & Partners, has been unanimously elected a member of Honour of the International Railway Congress by the members of the Permanent Commission of the Congress. Mr. Harvey, who has for 30 years been Consulting Engineer to the New Zealand Government Railways, has represented them on the Permanent Commission of the I.R.C.A. since 1929 until the present time.

Mr. A. P. W. Simon has been elected a Director of the Vacuum Brake Co. Ltd.

Mr. George Henderson has been appointed Sales Manager, and Mr. N. L. Jones, London Manager, of Bruce Peebles & Co. Ltd., Edinburgh.

Sir John Hacking, M.I.E.E., who recently retired from the position of Deputy Chairman (Operations), British Electricity Authority, has joined Messrs. Merz & McLellan as a consultant.

Major-General R. F. Belchem, C.B., C.B.E., D.S.O., has been appointed a member for special duties of the personal staff of the Chairman of Tube Investments Limited.

Mr. J. G. Fraser, C.A., has been appointed Secretary to the associated companies Tufnol Limited, George Ellison Limited and Alfred Ellison Limited. Mr. Fraser succeeds Mr. R. Sawyer who retires after 42 years service.

Mr. F. C. Wake, recently Regional Controller, Ministry of Supply, has been appointed Manager of a new branch office of Head, Wrightson & Co. Ltd., which has recently been opened at 7, The Side, Newcastle-on-Tyne, 1.

Mr. T. W. J. Temple has been appointed Manager of the Middlesbrough Office of British Thomson-Houston, Co. Ltd., to succeed Mr. G. Lloyd Jones who is shortly taking up another appointment in the BTH organisation.

Mr. G. W. Telford, Chief Accountant for Birmingham, Dunlop Rubber Co. Ltd., until his partial retirement last year, is now giving up his position as one of the local directors at Fort Dunlop which he continued to hold while completing certain work in hand.

We regret to record the death on December 31, at the age of 88, of Sir Frederick Mills, Bt., J.P., D.P. Sir Frederick Mills was a former Chairman & Managing Director of the Ebbw Vale Steel, Coal & Iron Co. Ltd., the iron and steel assets of which were acquired in 1935 by Richard Thomas & Co. Ltd., later Richard Thomas & Baldwins, Limited.

Babcock & Wilcox Limited states that Mr. L. W. H. Rea and Mr. W. Smith have been elected Directors of Edwin Danks & Co. (Oldbury) Ltd. Mr. Rea is the General Manager and Mr. Smith Works Manager of the company.

Mr. Annole H. Human, for many years sole partner in the consulting firm of McLellan & Partners, has retired. The practice is being carried on by Sir Henry Clay, Bart., Mr. G. N. Hewett, and Mr. T. B. Rolls, who, together with the partners of Merz & McLellan, are the new partners. Mr. Human will continue his association with the firm as a consultant.

INSTITUTION OF MECHANICAL ENGINEERS

The following have become Associate Members of the Institution :—

Mr. R. B. Dann, the Newall Engineering Co. Ltd.

Mr. A. M. Frankau, M.A.(Cantab.), British Iron & Steel Research Association.

Mr. A. Frenkel, D. Napier & Son Limited.

Mr. J. L. Gilbert, Pullman Car Co. Ltd.

Mr. J. S. Hay, I.C.I. Ltd.

Mr. D. Newlands, Rendel, Palmer & Tritton.

XUM

Cheap Evening Fares in London Area

Experimental scheme to operate from January 25 on British Railways and London Transport

In continuance of the policy of taking every available opportunity to stimulate additional railway passenger revenue by the issue of cheap fares at attractive rates, the British Transport Commission announces its approval of schemes prepared by London Transport and by British Railways for the introduction of cheap evening return fares in the London area.

These fares, which are experimental, will be issued from a number of London Transport and British Railways suburban stations and will be available for evening journeys to the centre of London. They will come into operation on January 25.

In introducing these arrangements the Commission points out that it is making a big experiment and taking a commercial risk in the hope that the cheap evening fares will induce many more people to travel; the continuation or extension of the experiment will depend on the results.

Bookings from British Railways Stations

On British Railways, it is announced, the new cheap evening return tickets will be issued from selected stations both to the London termini, and through them, in certain cases, to London Transport stations in the West End. The fares will be lower than day return tickets.

Where first class accommodation is available from suburban stations, first class cheap evening returns will be given at 50 per cent above the third class fare. Half-fare tickets will be available for children.

Cheap evening tickets will in most cases be issued from 5 p.m. onwards. The facility will apply every evening except Sundays.

Details of fares and so on from stations on British Railways are being published by the several Regions.

London Transport

The new cheap fares will be available to the centre of London, subject to a minimum return fare of 1s. 6d., from all stations on the Underground beyond those fairly close in town. Travellers using over 150 stations will benefit.

They will be on a tapering scale. London Transport stations as far out as Aylesbury, Uxbridge, Watford, Ongar, Upminster, and Morden will be in the scheme. Some of the reductions, for the longer journeys, will be 50 per cent and more.

From each station in the scheme there will be one cheap fare providing for a return journey to any one station in the Central London zone, with Piccadilly Circus as the centre.

The return half can be used from the same station or any other station in the Central London zone. This zone, five miles wide and two miles deep, extends from Olympia to Angel and from Euston to Waterloo; it contains 43 London Transport stations in the more central parts of London and covers all the main Central London attractions.

The London Transport Executive states that the scheme is the first of its kind since the war, and being introduced with the double object of giving residents in outer London a chance to come up and enjoy the entertainment, cultural, and other attractions of the West End, and of increasing revenue. Much extra evening traffic, it is believed, could be secured by really attractive cheap fares.

The starting time of journeys on the new cheap tickets will be by any train after 5 p.m. at all stations affected, except for certain stations further out, where it will be 4.30 p.m. Tickets will be available for return by any train the same night and also available intermediately; thus a passenger who wishes to travel from his home station to one short of the Central zone and finds it pays him better to take one of the new cheap evening tickets, can end his journey wherever he pleases.

Examples of the new cheap evening return fares from London Transport stations to the Central London zone, compared with the normal return fares to Piccadilly Circus, are given below:—

Station	Cheap evening return fare to Central London Zone	Normal return fare to Piccadilly Circus
	s. d.	s. d.
Stratford	1 6	2 0
Morden	1 6	2 2
Edgware	1 9	2 6
Cockfosters	1 9	2 8
Hounslow West ...	2 0	3 0
Newbury Park ...	2 0	3 2
Pinner	2 3	3 6
West Ruislip ...	2 3	3 8
Debden	2 6	4 2
Epping	2 9	5 0
Great Missenden ...	3 6	8 0
Aylesbury	4 0	10 2

Western Region Camping Coaches

Because of the popularity of railway camping coach holidays British Railways, Western Region, are increasing the number of coaches available next season by the provision of five additional vehicles at new sites throughout the Region.

Let on weekly or fortnightly tenancies, the coaches are designed to provide sleeping accommodation for eight. They have a spacious living room and a well equipped kitchen, with cooking stove, crockery, and utensils. Hire charges are inclusive of all equipment except for oil for heating, cooking, and lighting, which may be obtained from the local stationmaster at a moderate charge.

Exhibition of Coaches

Fully equipped coaches are being placed on exhibition to the public at the following Western Region stations, where railway representatives will be in attendance to give information and advice on the planning of camping coach holidays (Mondays to Fridays inclusive) :—

January: Newport High Street (4th to 8th); Paddington (11th to 15th); Cardiff General (11th to 15th); Worcester Shrub Hill (11th to 15th); Pontypridd (18th to 22nd); Bristol Temple Meads (25th to 29th); Birmingham Snow Hill (25th to 29th).

February: Swansea High Street (1st to 5th); Cheltenham St. James (8th to 12th); Wellington (Salop) (8th to 12th).

Attractive Locations

Commencing on April 3, 35 camping coaches will be ready for letting at the stabling points near attractively situated seaside and country stations in the Thames and Wye Valleys, West of England, and Wales.

Charges vary according to the month booked as shewn below; the only stipulation imposed on the letting is that each party must buy a minimum of six adult ordinary return tickets, two child tickets counting as one adult, from the home station to the selected camping coach station.

The weekly rentals are:

Saturdays, April 3 to May 8, £7; May 15 to June 12, £9 10s.; June 19 to September 4, £11; September 11 to 25, £9 10s.; October 2 to 23, £7.

"Starlight Specials" again in 1954

British Railways are to run again this year the "Starlight Special," the eight- and fifteen-day period excursions introduced as an experiment last summer between London and Edinburgh and London and Glasgow and vice versa.

The first "Starlight Specials" of 1954 will leave London and Edinburgh and Glasgow on Friday night, April 9, a week before Easter, and they will run each weekend until September 24. The fare will remain at 70s. return, compared with ordinary third class return fares of 114s. 8d. London-Edinburgh, and 117s. 4d. London-Glasgow. As last year, these express overnight excursions will be composed of modern vestibule coaches including refreshment cars. The dates on which British Railways will begin to accept advance bookings will be announced shortly, with details of train times.

The "Starlight Specials" were introduced in April, 1953, and ran every Friday night until September. Over 25,000 bookings had been made before the first trains left, and during the season more than 75,000 passengers were carried.

New Vessel on Clyde Service

British Railways m.v. *Arran*, the first of three general-purpose ships specially designed for the conveyance of passengers, cargo, wheeled traffic, and livestock on the Clyde estuary, went into service between Gourock and Dunoon on January 4.

A novel feature of the ship is the electrically-operated lift, 33 ft. × 20 ft., for transferring vehicles between main deck and pier levels at all stages of the tide and turntables on the lift platform and at the forward end of the car deck to facilitate storage. The lift can take a bus 30 ft. long × 8 ft. broad × 9 ft. 6 in. high.

Motorists between Glasgow and Dunoon are saved the long journey via Arrochar of 75 miles; they can drive from Glasgow to Gourock, 25 miles, and then cross by the vessel to Dunoon in about 20 min. Before the advent of the *Arran* only a few cars, dependent on the tide, could be conveyed.

The new vessel has a raked stem and cruiser stern. Amenities include lounges, a tea room, and refreshment bar. Up to 450 passengers can be carried and the main deck provides covered accommodation for cargo and 14 motor cars. Gross tonnage is 650 and operating speed 15 knots.

She was launched from the Leven Shipyard of Denny & Brothers, Dumbarton, and is the forerunner of similar ships which later will be introduced on the Fairlie-

Millport-Brodick and Wemyss Bay-Rothesay services.

When the *Arran* arrived at Dunoon on the recent inaugural run, Miss C. S. McPhail, Pier Convener, Dunoon Council, welcomed the new facilities the vessel afforded for tourism and expressed official appreciation of the improved prospect from the increasing number of motoring visitors to the Cowal Coast.

The Provosts of Dunoon, Gourock and Rothesay with other civic officials who were assembled on the ship then watched Lord Inverclyde, representing the Scottish Tourist Board, cut a broad ribbon to allow the first car to drive ashore.

Benefit of New Service

Speaking at a luncheon given by Dunoon Town Council, Provost C. W. Black said the new service would be of general benefit to the community and thanked the British Transport Commission for the effective way in which this new type of ship would meet changing travel trends and make Dunoon a new gateway to the Western Highlands.

Mr. James Ness, Deputy Chief Regional Officer, British Railways, Scottish Region, replying on behalf of the B.T.C., said there could be no doubt in anyone's mind that the Clyde shipping services were considered important by the Commission. Recognition of this was measured by the outlay of over £1,250,000 on the seven vessels being brought into service, the last of which would be ready for the forthcoming summer season.

He described the *Arran* and her sister dual-purpose ships as significant developments in providing efficient and economical services, and went on to say that he was confident that with the co-operation of the authorities in the coastal resorts, results of mutual advantage could be assured.

Staff & Labour Matters

Docks & Canal Staff Wages Increase

Representatives of the British Transport Commission, Docks & Inland Waterways Board of Management, met officials of the Transport Salaried Staffs Association and the National Union of Railwaymen on January 6. It was agreed to award an increase of 4s. a week to staff employed at former railway-owned docks and canals covered by agreements between the Board and the two unions, with effect from December 6, 1953, on the same terms and conditions as the award recently made to the staff of British Railways.

It was further agreed that the rates of pay and salary and wage structures would be the subject of review at another meeting to be called at an early date.

Electricians' Wage Dispute

A threat of "guerrilla" strikes by electricians throughout the country has been made because the National Federated Electrical Association felt itself unable to meet the unions' wage demands.

The dispute is long standing. The Minister of Labour, Sir Walter Monckton, appointed a court of inquiry which on October 14 last recommended that the employers' association and the unions should resume direct negotiations on wages and refer their difference to arbitration if they were unable to make progress. Several meetings have since taken place but a deadlock was reached and the unions were reluctant to refer the dispute to arbitration.

In an attempt to meet the men, the N.F.E.A. offered to increase wages by 1½d. an hour subject to two conditions, (*a*) that it should not apply to most part of the counties on or near the South Coast or in East Anglia, where electrical contracting firms are finding difficulty in getting work, and (*b*) that the Electrical Trades Union should agree to a reduction in overtime rates for the first six hours worked beyond ordinary time in a normal week. The reduction should be from payment at the rate of time-and-a-half to time-and-a-third.

Officials of the E.T.U. said they were prepared to commence negotiations if the N.F.E.A. would offer the increase of 1½d. an hour without conditions. Alternatively, if the employers would increase wages immediately by that amount without conditions, the union would accept arbitration on the question of whether any further increase should be granted.

The N.F.E.A. was unable to accept the Union demand and accordingly they notified the Ministry of Labour of the dispute. A limited number of men were reported to have gone out on strike as we went to press.

Railway Shopmen: Differentials for Chargehands

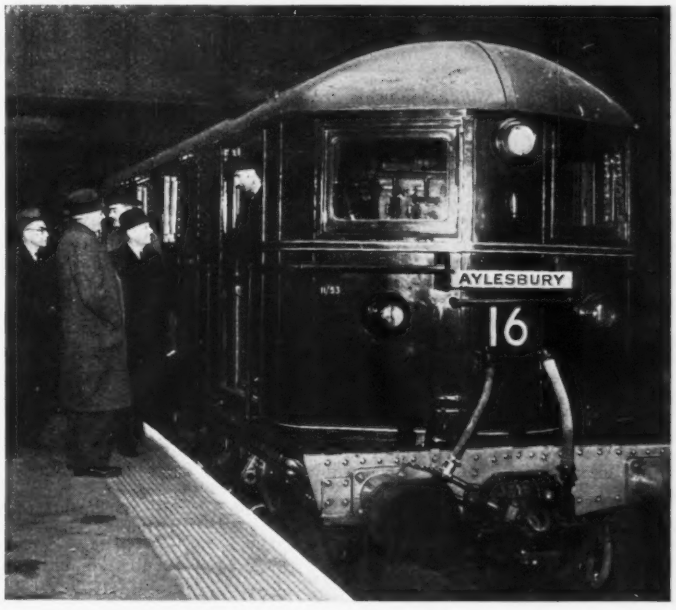
The Industrial Court under the chairmanship of Sir John Forster has issued its award (No. 2492) dated January 4, 1954, on the claim of the employees' side of the Railway Shopmen's National Council that the existing scales of chargehands differentials as set out in the agreement in R.S.N.C. Minute No. 650 dated March 18, 1949, should be increased, such increase to be paid "out of office" in cases where chargehands are working in piecework gangs.

The claim was referred to the Industrial Court for settlement in accordance with the agreed negotiating machinery and the parties were heard on December 21, 1953.

The Court has awarded that the existing scales of chargehands differentials as set out in the agreement referred to above shall be increased for chargehands in Group 1 by 2s., for those in Group 2 by 3s., and for those in Group 3 by 4s.

Such increase shall in respect of charge-

Mr. John Elliot on Inspection Tour



Mr. John Elliot, Chairman of the London Transport Executive, (left) inspecting interior of Metropolitan Line electric locomotive "Oliver Goldsmith" and (right) with London Transport officers at Liverpool Street. As recorded last week, locomotives of this class are being repainted in pre-war livery

hands in charge of piecework gangs be paid "out of office" while piece rates currently operating continue to apply.

The award is operative from the first full pay period after January 4.

Siding Lighting with Sodium Lanterns

When the number of sidings in a group is not large, lanterns may be mounted on lighting columns in rows at each side of a grid of tracks. This arrangement has been adopted in the sidings at Calverton Colliery, Notts, where there is accommodation in the sidings for the wagons required to move an estimated final output from the two shafts of 1,000,000 tons of coal a year.

The Calverton sidings are at the end of the branch of British Railways described in our issue of October 3, 1952, so that it was unnecessary to give special attention to directional lighting or to its colour to avoid confusion with main-line signalling.

In this installation it has been possible to use a normal sodium streetlighting lantern. The General Electric Co. Ltd. supplied some 80 lanterns of this type for the scheme, with Osram 140-W sodium lamps. In the lantern adopted, the lamp is enclosed by a dish of Perspex, with refractor plates cemented to its sides for light control.

Calverton Colliery Sidings, showing arrangement of sodium streetlighting lanterns

Positioning of Lanterns

The lanterns are mounted 25 ft. above ground level on Stanton "6F" reinforced concrete columns. They are accessible by ladder for cleaning and maintenance. Spacing between the columns in each row is 120 ft. for most of the length of the sidings, but they are placed closer together at the entry to each group of tracks to provide additional lighting in the points area.

The installation was planned in conjunction with Mr. H. Drury, Chief Engineer, No. 6 Area, National Coal Board.

PASSENGER SERVICE AT ROWLANDS GILL STATION WITHDRAWN.—On February 1, 1954, the passenger train service will be withdrawn from Rowlands Gill Station, North Eastern Region. The station will remain open for freight train traffic.

Initial Operation of the Europ Wagon Pool

The revised Europ wagon pooling scheme, involving the co-operation of ten European railway administrations, which came into force on March 15, 1953, and formed the subject of an article in our July 24, 1953, issue, has now been running for rather more than nine months. After two meetings of the Europ Commission, which includes representatives of each of the participating administrations, details were released of the functioning of the scheme during the initial stages.

Immediately after the agreement was signed, the affixing to the wagons of the "Europ" sign was begun; by November, 95 per cent of the pool of 160,000 wagons had been so marked, 93·5 per cent of covered and 95·4 per cent of open wagons. The proportion of international traffic conveyed in Europ wagons increased consistently during the early months and by November was 70 per cent. A study of wagon exchange records showed that at certain points there was a fairly constant credit balance and at others a comparatively regular debit balance. With the aid of these records it is proving possible to plan in advance the compensatory movement of empty wagons.

Only minor difficulties have been experienced from the technical point of view and wagons have, in general, been kept satisfactorily on the move. Early troubles regarding the distribution of spare parts have been surmounted.

Flat Wagons

The Luxembourg Railways are anxious that flat wagons be included in the pool, at present limited to covered and open wagons. Because of technical difficulties it was decided to remit a study of this question to a sub-committee under the presidency of the Luxembourg Railways.

The Europ agreement provides that wagons of the type specified by the O.R.E. (Office de Recherches et des Essais) ordered by member administrations will be incorporated in the pool. To increase their contribution more rapidly, however, certain administrations have marked "Europ" on wagons with the necessary technical qualifications, even though these wagons are not yet included statistically in the pool.

Other pertinent questions include a study of the financial incidence of the Europ scheme with a view to assessing its true economic value; this study has not yet been brought to fruition.

British Railways 1954 Rolling Stock Building Programme

British Railways plans for new rolling stock in 1954 include the provision of 2,750 passenger train vehicles, 53,000 freight wagons, and 325 locomotives. This is two-and-a-half times the number of passenger train vehicles built in 1953, 36 per cent more freight wagons, and 50 per cent more locomotives; the programme reflects the improved steel supply and the determination of the British Transport Commission to concentrate on replacing obsolete vehicles, particularly passenger coaches, with all speed.

All the passenger coaches and brake vans will be of the new standard all-steel design; 1,820 will be passenger-carrying vehicles and the remaining 930 will be brake-vans, horse boxes, fish vans, and other vans for running in passenger trains. British Railways shops will build 2,180 vehicles and the remainder will be built by contractors.

New wagons will include 3,100 for carrying loads of steel weighing up to 50 tons, and various wagons of special design for carrying loads of 21-65 tons. Of the total of 53,000 new wagons, 20,000 will be built in British Railways shops.

Of the 325 locomotives to be built, 254 will be of the new standard design including 40 class "9" heavy freight engines, the first of this type to be built and the most powerful in the British Railways standard range. There will also be 14 diesel-mechanical shunters, and 50 steam tank engines for shunting.

New Year Resolutions for London Transport Staff

Two new year resolutions for London Transport staff have been put forward by the Chairman of the London Transport Executive, Mr. John Elliot, in a message published in the January issue of the *London Transport Magazine*.

In his message, Mr. Elliot states: "Let us resolve to keep costs down through efficiency and economy in every part of London Transport. Let us resolve to maintain and enhance London Transport's reputation as the world's finest urban transport system, in the strong belief that London Transport belongs to London and must serve London and the areas round it to the utmost of its ability."

"London Transport's reputation," he continues, "will be in the hands of each one of us during the coming year. The goodwill of the London travelling public is of the greatest importance to us in the better performance of our task. Let us try our hardest to keep the Londoner's esteem and if possible his affection by the way in which we serve him and his family."

Mr. Elliot states that some costs are still rising, making economy and efficiency more essential than ever so as to make ends meet. Off-peak traffic shows a tendency to decline, and to keep up the revenue the service must be made as efficient, comfortable, and attractive as possible.

The message ends: "I am privileged to have been called to be the leader of a fine team. Everything that I can do, and such experience as I have gained in a working life spent in transport, will be devoted to helping you to go on doing your job even better in the future."

Contracts & Tenders

British Railways, Eastern Region, have placed the undermentioned contracts :—

Bagguley & Barker Limited, Nottingham: remedial measures to slip in Wrawby Cutting

Rotinoff Construction Limited, London, S.W.1: stabilisation of earthworks between Pitsea and Benfleet

British Railways, North Eastern Region, have placed the following orders :—

Cleveland Bridge & Engineering Co. Ltd., Darlington: construction of superstructure of bridge over St. Cuthbert's Way, Simpasture branch

J. Dingwall & Son, Gateshead: erection of new staff accommodation, Addison Mineral Yard, Blaydon

English Electric Co. Ltd., Liverpool, 10: welding equipment, Shildon Wagon Works

British Railways, London Midland Region, have placed the following contracts:—

Mellowes & Co. Ltd., Sheffield: renewal of the engine shed roof with patent roof glazing at Walsall Motive Power Depot

Scaffolding (Great Britain) Limited, Birmingham: hire and erection of scaffolding for the renewal of the roof coverings at Rugby Midland Station

G. & J. Seddon Limited, Walkden: renewal of a portion of the engine shed roof at Southport Motive Power Depot

Thos. W. Ward Limited, Sheffield: removal of track, bridges, etc., on the Aspatria-Mealsgate line

Robertson Thain Limited, Ellesmere Port: renewal of the roof with protected metal roof decking over platforms nos. 1 and 2, Pall Mall side, Liverpool Exchange Station

Tenders are invited for 21 shunting locomotives for the Port of Calcutta. Full details are given under Official Notices on page 83.

Tenders are invited for fabricated steelwork for a diesel-electric locomotive shop in Eastern Pakistan. Full details are given on page 83 under Official Notices.

The closing date for the receipt of tenders for the supply of railway tipping wagons, required for the Madras Port Trust, details of which were given in our January 8 issue, has been postponed to February 15.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for 21036 m.s. galvanised plates division to I.R.S. Drg. No. W-2261 alt. 5 and IRSS No. R-20/50 with corrig. No. 1 of October, 1952.

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17196-D/III, and will be received up to 10 a.m. on January 23.

The Special Register Information Service Board of Trade, Export Services Branch, reports that the United Kingdom Trade Commissioner at Delhi has notified four calls for tenders issued by the Directorate General of Supplies & Disposals, Government of India, for various railway point locking parts, brake pipes, rail clips and signal posts.

The closing date for tender no. SR2/18410-D/III is January 28; for tender no. SR2/17882-D/III, January 18; for tender no. SRIA/17111-D/IV, January 19; and for tender no SR2/18397-D/III, January 19.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for 700 buffer fittings; plungers and spindles complete for coaching and wagon underframes.

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16976-D/III. They will be received up to 10 a.m. on January 27.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for 3,300 wash handbasins corner type to I.R.S. drg. No. CA-1874 alt. nil with push cocks.

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16907-D/I. They will be received up to 10 a.m. on February 2.

The Special Register Information Service, Board of Trade, Export Services Branch, reports that the British Embassy at Montevideo has notified a call for tenders issued by the Administracion de Ferrocarriles del Estado for:—

Flexible brake pipes

1,500 2 in. dia.
150 ¾ in. dia.
400 ½ in. dia.
200 ½ in. dia.

Rolling rings for vacuum brake cylinders

2,000 15 in. dia.
1,500 18 in. dia.
250 21 in. dia.
2,000 rubber release valve diaphragms for automatic brakes
5,000 piston rod gland packing rings
2,000 universal coupling washers

The closing date for receipt of tenders is February 19, and the required guarantee for maintenance of offers is Ur$300.

The Board of Trade, Export Services Branch, has been notified of a call for tenders issued by the Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, for the supply of:—

250 top longitudinal cast steel (modified) draw gear, r.h.
250 top longitudinal cast steel (modified) draw gear, l.h.

The closing date for the receipt of tenders is January 20. Tenders should be submitted on the official tender form to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16918-D/III. If the date for the receipt of tenders does not allow sufficient time for tenderers to obtain tender forms from India, quotations may be submitted on firm's own letter-form or by telegram, so long as all essential particulars are given and tender forms applied for simultaneously and returned on the basis of advance quotation already made.

The British Embassy at Washington has notified the Board of Trade, Export Services Branch, of a call for tenders issued by the General Services Administration, Washington, for the supply in knock-down condition to the railways of Korea of 50 box cars and 50 gondola cars with all-steel underframes, diamond arch bar bogies, air brakes and automatic couplers. The vehicles are to have a capacity of 15 tons, to be suitable for a track gauge of 30 in. and capable of negotiating 30 deg. curves. The bogies are to be fitted with rolled steel wheels of 22⅞ in. dia.; the wheelbase of each bogie is to be 4 ft. 2 in. and the distance between bogie centres is to be 17 ft. The overall length of the vehicle bodies is to be 25 ft., overall width 6 ft. 6 in. and length of floor above rail 2 ft. 3 in.

The closing date for receipt of tenders is 3 p.m. E.S. time on January 18. Tenders in duplicate should be addressed to the General Services Administration Federal Supply Service, Region 3, 7th and D Streets, S.W., Washington 25, D.C. One copy of the specifications and conditions of tender may be inspected in Room 801 at the Branch, Lacon House, Theobalds Road, London, W.C.1. Two additional copies are available for loan to United Kingdom firms in order of receipt of application.

Notes and News

Vacancy for Traffic Inspector.—Applications are invited for the post of traffic inspector required by the Nigerian Government Railway. See Official Notices on page 83.

Vacancies for Draughtsmen.—The Gloucester Railway Carriage & Wagon Co. Ltd., Gloucester, have vacancies for experienced draughtsmen. See Official Notices on page 83.

Leading Draughtsman Required.—Applications are invited for the post of leading draughtsman required by the Crown Agents for the Colonies London office. See Official Notices on page 83.

Technical Assistant Required.—A London firm requires a technical assistant between 30 and 40 years of age, for general duties, including outdoor work. Railway experience an advantage. See Official Notices on page 83.

Bridge Collapse on Northern Railway of India.—Seventeen persons are reported to have been killed and some 40 injured when a bridge collapsed on January 4 under a passenger train which had left Bhatinda for Ambala, Northern Railway of India.

Toronto Underground Rolling Stock.—The illustration at the top of page 42 in the article on the British-built rolling stock for the Toronto underground system in our issue of January 8, depicts the electro-pneumatic brake unit, and not the retardation controller.

Sale of B.T.C. Road Haulage Assets.—List No. 2 issued by the Road Haulage Disposal Board of transport units to be sold under the Transport Act, 1953, contains 594 units with a total of 3,062 vehicles. Of the transport units 161 include premises, parking facilities, and so on.

Filming on L.M.R. Stanmore Branch.—The London Midland Region is co-operating with the Gaumont British Picture Corporation Limited in making a comedy thriller film, "The Gold Express." The plot takes place on a sleeping car express and the Stanmore branch (recently closed between Belmont and Stanmore) is the location. Many scenes take place at Stanmore Village Station and among the many unusual 'props' lent by the London Midland Region are two first class sleeping cars complete with linen, and a third class vestibule restaurant car with crockery, ash trays, wine glasses, and waiters' trays. Uniforms for sleeping car attendants, guards, porters, ticket collectors, and station-masters have also been provided. Complete sets of compartment fittings for two first class sleeping cars and for a restaurant car

XUM

have enabled the film company to build mock-ups for studio shots.

Institute of Transport: Annual Dinner.—The annual dinner of the Institute of Transport will be held on Friday, February 26, at 6.45 for 7.30 p.m. at Grosvenor House, Park Lane, London, W.1. The principal guest at the dinner will be Sir Brian Robertson, Chairman of the British Transport Commission.

British Railways Coal, Iron, and Steel Traffic.—British Railways carried 406,730 tons of deep-mine and opencast coal during the 48 hr. ended 6 a.m. on January 11, bringing the total for the week up to 3,089,770 tons. During the week ended January 2, 182,830 tons of iron and steel from principal steelworks, and 294,307 tons of iron ore were conveyed.

Institute of Transport: Brancker Memorial Lecture.—On Monday, February 8, in the Jarvis Hall (R.I.B.A.), 66, Portland Place, London, W.1, the Brancker Memorial Lecture "The impact of the gas turbine on civil aviation," will be delivered by Sir Miles Thomas, Chairman, British Overseas Airways. Visitors will be welcome.

Royal Engineers Army Emergency Reserve (Transportation) Annual Dinner.—The Annual Dinner of the Officers of the Royal Engineers Army Emergency Reserve (Transportation) will be held on Friday, January 29, at the Criterion Restaurant, Lower Regent Street, London, W.1., at 7 for 7.30 p.m.

Institution of Locomotive Engineers: Informal Meeting.—On Thursday, February 4, at 5.30 p.m. the Institution of Locomotive Engineers will hold an informal meeting at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, when the following films will be shown:—"Main line diesel," "Testing of locomotives," "2-D-2 Electric locomotive," "London to Brighton in four minutes," and "Overhaul." Light refreshments will be served at 5 p.m.

Glyn, Mills & Company Results.—The report of Glyn, Mills & Company for the year ended December 31, 1953, shows that the profit for the year, after providing for taxation and transfer to reserve for contingencies was £154,658. To this has to be added the balance brought forward from 1952 of £76,555, making a total of £231,213. Out of this sum, £79,500 was appropriated to interim dividend of 7½ per cent paid on August 17, 1953, less £35,775 for income tax at 9s. in the £. There was an additional transfer for £50,000 to reserve for contingencies, leaving £137,488, from which a final dividend of 8½ per cent (£90,100) is to be paid, amounting after deduction of income tax to £49,555; this leaves a balance to be carried forward of £87,933.

Society of Chemical Industry: Corrosion Group.—The 1954 Spring Lecture of the Corrosion Group of the Society of Chemical Industry will be delivered by Dr. L. B. Pfeil in the lecture theatre of the Chemical Society, Burlington House, Piccadilly, London, W.1, on Wednesday, January 20, at 6.30 p.m. The title of the lecture is "Metallurgical aspects of dry corrosion." On Thursday, January 21, in the Battersea Polytechnic, Battersea Park Road, London, S.W.11, at 6.30 p.m., the same Group will hold its annual conversazione and exhibition. The exhibition will contain some forty contributions by various companies and research organisations, illustrating methods of protecting iron and steel from corrosion. A film entitled "Pattern for Progress," illustrating modern tinplate production in South Wales, will be shown during the evening.

Institute of Transport: Informal Luncheon.—On Tuesday, February 2, at 12.30 for 1 p.m. the Institute of Transport will hold an informal luncheon at the Connaught Rooms, Great Queen Street, London, W.C.2. The principal guest will be Sir Archibald Forbes, Chairman, the Iron & Steel Board.

Locomotive & Carriage Institution of Great Britain and Eire.—The annual dinner and social evening of the Locomotive & Carriage Institution of Great Britain and Eire will be held in the Staff Dining Club, Liverpool Street Station, British Railways, Eastern Region, on Saturday, January 23, at 6.30 p.m.

Leyland Units for Belgian National Light Railway Buses.—A fleet of 25 rear-engine buses with chassis built and designed by Brossel Frères and incorporating diesel engines, gearboxes, and front axles shipped from England by Leyland Motors Limited, is being built for the Belgian National Light Railways (S.N.C.V.), which ran one of the buses for a trial period before placing the order.

United Steel Companies: Record Production.—The United Steel Companies Limited announce a record steel ingot production of 2,374,687 tons in 1953, claimed to be the highest ever produced in the British Commonwealth by a single company in one year, and exceeding the United Steels previous record of 2,216,427 in 1952 by about 160,000 tons. Pig iron production also reached a record level of 1,374,554 tons during the past year. Each of the company's branches made a handsome contribution to the total for the group. Appleby-Frodingham, for instance, became the first British steelworks to make more than 1,000,000 tons of steel in one year.

N.E. Region Publicity

Poster by British Railways, North Eastern Region, produced from a colour transparency

Silentbloc Interim Dividend.—The directors of Silentbloc Limited have declared an interim ordinary dividend of 2½d. a 2s. share (the same as for the previous year) in respect of the year ending May 31 next, payable on February 1.

Tingley Station to be Closed.—Tingley Station, North Eastern Region, will be closed from February 1. Facilities will be retained for special excursion traffic. Parcels traffic will be concentrated at Morley Top Station from which a motor collection and delivery service will operate.

Thesiger Report.—In the editorial article in our December 11 issue entitled "Licensing of Road Passenger Services" the word "not" was omitted in error in the fifth line of page 649. The sentence should read: "Evidence produced by critics of the British Transport Commission has not satisfied the committee that the Commission's control of some passenger road transport undertakings has in practice materially affected the services provided for the public under the licensing system."

Avalanche Havoc in Alps.—Avalanches which fell in Austria and Switzerland at the beginning of this week caused much damage and dislocation on the railways. At Dalaas, west of the Arlberg Pass, three coaches of a train and the station were submerged, trapping passengers. A train from Trieste to Germany conveying many Britons was stranded near Lend, Salzburg Province, but was freed after six hours by the efforts of American soldiers. The Arlberg main line is blocked in many places and trains are being diverted. Trains were derailed by avalanches at several places in Switzerland, but no casualties are reported. The Gotthard Line was blocked for a time but has been reopened.

Turner & Newall Limited Results.—The directors recommend in respect of the year ended September 30, 1953, a final dividend on the ordinary stock at 15 per cent actual, making 17½ per cent for the year, and a final dividend of 15 per cent actual on £267,500 ordinary stock issued since September 30, 1953, or to be issued in connection with the acquisition of shares in Porter's Cement Industries (Rhodesia) Limited and Porter's Cement Industries (Bulawayo) Limited. The balance for the year available for appropriation is £3,319,284, against £1,571,129 for the preceding year. The report points out that the more difficult conditions which became apparent in the second half of the previous year have continued to affect the activities of certain of the home manufacturing companies, resulting in lower turnover and lower gross margins. This has been offset by greater activity in the overseas mining companies but in this sphere also there is now evidence of reduced demand. In the circumstances the trading results for the year must be considered very satisfactory.

W. R. Sykes Interlocking Signal Co. Ltd.—The trading profit and sundry income for the year ended September 26, 1953, was £37,743 (£36,318) after depreciation and directors' emoluments. After deduction of interest £1,743 (£335), and tax £24,400 (£23,200), net profit was £11,600 (£12,783). After six per cent preference dividend £28,474 (£16,387) was carried forward after placing £8,003 to general reserve. Current assets were £169,975 (£142,220). Current

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

RAILWAY ENGINEER.—The Skefko Ball Bearing Co. Ltd. of Luton have a vacancy for a railway engineer to represent and further their varied interests in the railway field, chiefly in the London area. Age under 40; substantial salary to be the subject of negotiation. Replies, which will be treated in the strictest confidence, to be addressed to the TECHNICAL MANAGER.

TRAFFIC INSPECTOR required by NIGERIAN GOVERNMENT RAILWAY for tour of 12/24 months, either (*a*) with prospect of pensionable employment at salary etc. in scale £750 rising to £1,035 a year, or (*b*) on temporary terms at salary etc. in scale £807 rising to £1,115 a year with gratuity at rate of £100 or £150 a year. Commencing salaries according to experience. Outfit allowance £60. Free passages for officer and wife. Assistance towards cost of children's passages or grant up to £150 annually towards maintenance in United Kingdom. Liberal leave on full salary. Candidates must be qualified in train working under the "absolute block" system and be experienced in railway signalling and the working of goods and passenger stations. Applicants now serving with British Railways are eligible for secondment and should apply through their local officers. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/33990/RA.

GLOUCESTER RAILWAY CARRIAGE & WAGON CO. LTD., Gloucester, require experienced Draughtsmen. Five-day week. Staff pension scheme. Apply, stating age, details of experience and salary required, to CHIEF DESIGNER.

A.E.C. LTD. require Designers and Draughtsmen for development of Diesel Trains. Premises at Boreham Wood, Herts. Work is in connection with a new project on behalf of British United Traction Co. Ltd. Automobile and railway experience would be an advantage. Permanent employment and pension scheme. Applications in writing to STAFF RECORDS OFFICE, A.E.C. Ltd., Windmill Lane, Southall, Middlesex, stating age, experience and salary required.

LONDON FIRM requires Technical Assistant for general duties including outdoor work. Should have mechanical engineering qualifications and preferably railway experience. Age 30 to 40. Apply BOX 72, *The Railway Gazette*, 33 Tothill Street, London, S.W.1.

GUAQUI LA PAZ RAILWAY.—Assistant accountant. Qualifications: Man who has passed intermediate examination of recognised accountancy body preferred. Knowledge of railway accounts an advantage. Preferably single between 28/35 years of age. CENTRAL RAILWAY.—Traffic Learner for training as an official. Single. Between 21 and 25 years of age. Good general education with transportation experience either practical or theoretical. Knowledge of Spanish language preferable but not essential. Apply SECRETARY OF THE PERUVIAN CORPORATION, 144, Leadenhall Street, London, E.C.3.

GOVERNMENT OF PAKISTAN
MINISTRY OF COMMUNICATIONS
(RAILWAY DIVISION)

TENDER NOTICE

Supply of fabricated steelwork for a shed for the Diesel-electric Loco Shop at Pahartali (Chittagong).

1. Tenders are invited for the:—
(*a*) supply and delivery c.i.f., Chittagong, of fabricated steelwork consisting of stanchions, roof trusses, crane girders, roll-in shutters for doors, rainwater gutters, down pipes and aluminium roof sheeting, standard glazed sashes, etc., with fittings and complete in all respects ready for erection at site, for a shed for the Diesel-electric Loco Shop at Pahartali (Chittagong);
Or
(*b*) construction of a R.C.C. shed complete with crane girders, roll-in shutters for doors, rainwater gutters, down pipes, water proofing of roof and standard glazed sashes (excluding foundations).

2. Tenderers are required to quote for their own design, which should conform to the General Arrangements Drawing, a copy of which will be supplied with the tender documents. They will also be required to submit their design along with such calculations as would be required for checking the design, and the bill of quantities for the entire work, showing therein the split up of the lump sum price or rates quoted by them.

3. Tenderers are also required to submit design and loads for the foundations. If the foundations form an integral part of the structure, as in the case of R.C.C. shed, the cost of the foundations should also be quoted, but separate to the cost of the shed structure. The structure will be founded on natural soil with a bearing pressure of not exceeding 1 ton per sq. ft.

4. The successful tenderer will be required to execute an agreement before commencing supplies/construction, and will also be required to furnish a security deposit for 10 per cent of the value of the tender.

5. Form of Tender, General Arrangements Drawing, Specifications for the type of shed mentioned at (*a*) above, Conditions of Contract and Instructions to Tenderers can be seen at the office of the Director-General, Railways, Karachi, Pakistan, during office hours and can be obtained from:—
(1) THE DIRECTOR-GENERAL, RAILWAYS, Ministry of Communications, Railway Division, W-II Branch, Govt. of Pakistan, Multi-Storey Building, Karachi, Pakistan;
(2) THE GENERAL MANAGER, Eastern Bengal Railway, Chittagong, Pakistan;
(3) THE HIGH COMMISSIONER FOR PAKISTAN IN U.K., 37-39, Lowndes Square, Knightsbridge, London, S.W.1, England;
(4) THE EMBASSY OF PAKISTAN, 1744-R Street, Northwest, Washington, D.C., U.S.A.,
on payment of Rs. 25/- or an equivalent amount in £ sterling/dollars, which amount will not be refunded whether the tenderer is successful or not.

6. Tenders must be submitted in sealed covers marked "Tender for Pahartali Diesel-electric Loco Shop Shed" and addressed directly to:—
THE DIRECTOR-GENERAL, RAILWAYS, Ministry of Communications (Railway Division), Government of Pakistan, Multi-Storey Building, Karachi, Pakistan,
so as to reach him not later than 11 hours on April 5, 1954. These will be opened in public in the office of the Director, Civil Engineering, Railway Division, Karachi, on the same date and time. The quotations will be announced for the information of any tenderer who may desire to be present.

7. The Director-General, Railways, is not bound to accept the lowest or any tender.

A. S. FARUQUI,
for Director-General, Railways.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

THE COMMISSIONERS FOR THE PORT OF CALCUTTA

TENDERS are invited from manufacturers for the supply of 21 Broad Gauge Shunting Type Locomotives with spares and accessories. Tender forms and specifications may be obtained from Messrs. Rendel, Palmer & Tritton, Consulting Engineers and London Agents to the Commissioners, upon payment of a fee of £1 10*s.* 0*d.* which is not refundable under any circumstances. Tenders should be submitted in sealed covers superscribed "Locomotives—Five Year Plan" and addressed to MESSRS. RENDEL, PALMER & TRITTON, 125, Victoria Street, Westminster, London, S.W.1, so as to reach them not later than 2 p.m. on April 15, 1954.

LEADING DRAUGHTSMAN required by the CROWN AGENTS FOR THE COLONIES London Office for engagement on unestablished terms with prospect of appointment to the established staff and of promotion. Salary etc. £673 rising to £792 a year. Candidates should have been apprenticed in carriage and wagon building at a British Railway or Contractor's Works. They should have had experience in designing detail parts of carriages and wagons and must be good draughtsmen. A knowledge of locomotive construction would be an advantage. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2A/29909/RA.

ASSISTANT INSPECTING ENGINEERS required by the CROWN AGENTS FOR THE COLONIES for service primarily in the United Kingdom. Basic salary scale £650 × £25—£750 × £30—£900 a year plus extra duty allowance of approximately 8 per cent. Starting salary is linked to age, £650 at 25 with one increment for each additional year up to 34. Fully qualified officers at least 27 years old may be eligible for special salary increase of £75 after two years' service. Engagement on unestablished terms with prospect of appointment to the established staff and of promotion. QUALIFICATIONS. Candidates, aged 25-40, should at least have passed the qualifying examinations for Associate Membership of one of the major engineering institutions or equivalent, should have served an apprenticeship or pupilage and have had subsequent experience in one of the following categories:—Category 1, Locomotives, Rolling Stock; Category 2, Motor Vehicles, Diesel Engines; Category 3, Steel Structures, Permanent Way; Category 4, Machine Tools, Cranes; Category 5, Contractors' Plant; Category 6, Electric Power. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1, stating experience, category number (above), name in block letters, age, whether married or single, full qualifications, experience, knowledge of foreign languages, and quoting M2A/29418/RA.

THE GAS-TURBINE LOCOMOTIVE. A technical description of the gas-turbine recently constructed by the Metropolitan-Vickers Electrical Co. Ltd. for the Western Region, British Railways. Subjects dealt with include body construction, bogies, traction motors, prime mover, generators and auxiliary equipment. A folding plate drawing of the locomotive is included together with illustrations and diagrams. Reprinted from *The Railway Gazette*, February 1, 1952. Price 5*s.* Post free 5*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s.* 6*d.*—*The Railway Gazette*, 33 Tothill Street, London, S.W.1

liabilities and provisions were £105,395 (£55,782), including £53,198 owing to holding company (£10,639 owed by holding company).

Holman Brothers Limited: Change of Address.—Holman Brothers Limited are moving their London Office on February 6 from Broad Street House to 44, Brook Street, London, W.1. The telephone number is Hyde Park 9444, and the telegraphic address Airdrill, London.

East Kent Road Car Co. Ltd.—Presiding at the annual general meeting of the East Kent Road Car Co. Ltd., Mr. R. P. Beddow mentioned the reduction of journeys run on the more poorly-patronised services as one of the company's efforts to achieve economies and avoid further fare increases necessitated by wage increases. Many special services were run in January, 1953, on behalf of British Railways, whose railway services along the coast were hit by floods. He referred also to the good work done for many years by the Road-Rail Standing Joint Committee to develop road-rail connections and facilities. Between eight and nine thousand passengers made use of interavailable rail and road tickets during the year.

Thos. Firth & John Brown Limited: Cardiff Office.—The new address of the Cardiff office as from January 1 is: Thos. Firth & John Brown Limited, 46, Park Place, Cardiff. The telephone number remains the same, Cardiff 27922.

Powell Duffryn Limited Dividend.—The following dividend is announced by Powell Duffryn Limited: interim dividend of 3 per cent actual, less income tax at 9s. in the £, on the £9,660,471 ordinary stock in respect of the year ending March 31, 1954. Payment is to be made on February 27 to holders registered on the books of the company at close of business on January 8, 1954.

Charles Roberts & Co. Ltd. Dividends.—The directors of Charles Roberts & Co. Ltd. have resolved to pay an interim dividend of 6d. per 5s. unit, less income tax at 9s. in the £, on the ordinary stock on account of the year ending March 31, 1954, payable on February 12. This is at the same rate as for the preceding year. It was also resolved to pay a dividend at the rate of 6½ per cent per annum, free of tax up to 4s. in the £, on the preference stock for the half-year ended December 31, 1953, payable on March 1, less tax at 9s. in the £.

Forthcoming Meetings

January 16 (*Sat.*).—Stephenson Locomotive Society, North Eastern Area, at the Chemical Industry Club, Lovaine Place, Newcastle-upon-Tyne, at 6.15 p.m. Illustrated paper on "Railways of Italy in peace and war," by Mr. R. A. Savill.

January 18 (*Mon.*).—Institution of Electrical Engineers, at Savoy Place, London, W.C.2, at 5.30 p.m. Discussion on "The role of the consulting engineer," opened by Mr. T. G. N. Haldane.

January 18 (*Mon.*).—Institute of Transport, Metropolitan Section, at 80, Portland Place, London, W.1, at 5.30 for 6 p.m. Paper on "In all directions—trade and transport," by Mr. W. J. Phillipson.

January 18 (*Mon.*).—Institute of Transport, Darlington Group, at United House, Darlington, at 7 p.m. Paper by Mr. E. W. Arkle.

January 19 (*Tue.*).—Stephenson Locomotive Society, Midland Area, in the B.T.H. Social Rooms, Holyhead Road, Coventry, at 7.30 p.m. Lecture on the "History of some of the railways in the Coventry area," by Mr. C. R. Clinker.

January 19 (*Tue.*).—Institute of Transport, Humberside Section, at the Chamber of Commerce & Shipping, Hull, at 7.30 p.m. Paper on "Organisation of international transport in Europe," by Brig.-General Sir. H. Osborne Mance.

January 19 (*Tue.*).—Institute of Transport, North Western Section, at the Cafe Royal, Manchester, at 6.45 for 7.15 p.m. Annual dinner and visit of President.

January 20 (*Wed.*).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. Paper on "The wearing parts of electric rolling stock—a review of the experience on the London Transport System," by Mr. A. W. Manser, Chief Mechanical Engineer, Railways, London Transport Executive.

January 20 (*Wed.*).—Permanent Way Institution, London Section, at the British Transport Commission Headquarters, 222, Marylebone Road, London, N.W.1, at 6.30 p.m. Paper on "London Transport track problems on bridgework and waybeam renewals," illustrated by lantern slides, by Mr. H. C. Trissler.

January 20 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at Chapter House, St. Thomas Street, London Bridge, S.E.1, at 5.45 for 6 p.m. Paper on "Postal service and transport," illustrated by lantern slides, by Mr. F. C. Fielder, Controller, London Postal Region.

January 20 (*Wed.*).—Society of Chemical Industry, at the Chemical Society, Burlington House, Piccadilly, W.1, at 6.30 p.m. Paper on "Metallurgical aspects of dry corrosion," by Dr. L. B. Pheil.

January 21 (*Thu.*).—Society of Chemical Engineers, at the Battersea Polytechnic, Battersea Park Road, S.W.11, at 6.30 p.m. Exhibition and conversazione.

January 21 (*Thu.*).—Institute of Welding, South London Branch, at 2, Savoy Hill, London, W.C.2, at 6.30 p.m. Paper on "Tubular steel structures," by Mr. N. B. Elliott.

January 21 (*Thu.*).—Stephenson Locomotive Society, at 32, Russell Road, Kensington, W.14, at 6.45 p.m. Illustrated talk on "The Talyllyn Railway," by Mr. T. W. Robertson.

January 21 (*Thu.*).—Institute of Transport, South Wales & Monmouthshire Section, at the South Wales Institute of Engineers, Cardiff, at 7.15 p.m. Paper on "Road haulage," by Mr. G. W. Quick Smith.

January 21 (*Thu.*).—Institute of Welding, North London Branch, at the Polytechnic, Regent Street, London, W.1, at 7 for 7.30 p.m. Paper on "Steel making and welding," by Mr. L. Reeve, Chief Metallurgist, Appleby Frodingham Steel Co. Ltd.

January 23 (*Sat.*).—Locomotive & Carriage Institution of Great Britain and Eire, in the Staff Dining Club, Liverpool Street Station, British Railways, Eastern Region, at 6.30 p.m. Annual dinner and social evening.

January 23 (*Sat.*).—Institute of Transport, Irish Section, at the United Service Club, Dublin, at 7.30 for 8 p.m. Annual dinner and visit of Mr. A. B. B. Valentine, Past President.

January 26 (*Tue.*).—Railway Students' Association. Afternoon visit to Kings Cross Goods Depot.

January 27 (*Wed.*).—Permanent Way Institution, Newcastle Section, in the Lecture Hall, District Engineer's Office, Forth Banks, Newcastle-upon-Tyne, at 6.30 p.m. Paper on "Steel sleepers," by Mr. J. C. Hudson.

January 28 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Paper on "Railway rates and charges as affected by the Transport Act, 1953," by Mr. H. D. Poole, Assistant to Commercial Superintendent.

Railway Stock Market

Much business was again reported in stock markets, but best levels were not held, particularly in the industrial section. The "guerilla" strikes and fears of higher wage demands in other industries affected sentiment, and in the circumstances recent big gains were followed by a fair amount of profit-taking. Subsequently the rather lower prices brought in buyers again, particularly for shares of companies whose earnings in recent years have been much above the rate of dividend paid, and which seem likely to pay out more to shareholders this time. There is no doubt that widespread expectations of lower taxation this year are an important factor already influencing sentiment in stock markets.

Foreign rails are receiving only moderate attention, though the attractions of Antofagasta preference stock are more widely recognised and buying strengthened the price to 45, while the ordinary stock was 9¾.

The continued absence of any fresh news from Manila kept buyers off Manila Railway stocks, which again moved against holders, though little selling was in evidence. The "A" debentures receded further to 76 and the "B" debentures to 66, while the preference shares were 8s. and the 1s. ordinary 4s. Only moderate business was reported in United of Havana second income stock at 42, while the consolidated stock was 6⅜.

Yield considerations drew some attention to White Pass convertible debentures, which rallied to £97, while the no par shares were $27. Canadian Pacifics were better at $41½xd; the 4 per cent preference stock changed hands around £68½ and the 4 per cent debentures around £87¼.

Mexican Central "A" debentures were 82, San Paulo units 5s. 9d., but Nitrate Rails ordinary shares eased to 20s. 6d.

A firm tendency was shown by French railway sterling bonds, with Midi 4 per cents at 84½.

Dorada ordinary stock again attracted some attention up to 62 on the view that, should there be a takeover move, any fair and reasonable payout for the railway would give the stock a break up value well over its current market price.

Guayaquil & Quito 5 per cent first bonds were dealt in between 43⅛ and 44½. Chilian Northern 5 per cent first debentures have marked 29. International of Central America no par value shares recorded business at $11⅛, while in other directions business around £9¾ was shown in United Railways of Yucatan 1st gold bonds.

Taltal shares were dealt in at 14s. 3d. Chilian Northern first debentures marked 29.

There were again some dealings in old Russian railway bonds; Black Sea Kuban 4½ per cents, for instance, marked 1¼.

There were fewer dealings among road transport shares, but B.E.T. 5s. deferred units at 40s. 1½d. remained active on higher dividend expectations. Southdown were 28s., West Riding 26s. 9d., and Lancashire Transport 48s. 6d. Ribble Motor Services marked 36s. 6d., Devon General 26s. 9d. and Scottish Motor Traction 5s. shares 17s. 10½d.

The higher wages claims kept engineering shares quiet. Another factor making for caution was the impending Lancashire Steel issue which will absorb a fair amount of money from the institutions and private investors which would otherwise have gone into other securities. The prevailing view is that there will be good demand for the public for the preference shares in view of their attractive yield, but that the bulk of the ordinary shares may have to be taken up by the important finance houses backing the steel issues. On the other hand, it is being suggested that as there is unlikely to be a great deal of stagging of the Lancashire Steel offer, it will not be subject to the same persistent selling as has been the case with United Steel, and Lancashire Steel ordinary shares, it is being suggested, may start dealings at a small premium and not go to a discount like United Steel. Moreover, a premium of around 6d. is looked for an Lancashire Steel preference shares. Babcock & Wilcox have been in demand around 50s. 6d. and Clarke Chapman rose further to 73s. 6d. on higher dividend expectations. At the time of writing, Guest Keen have held their rally to 52s.

Beyer Peacock have been firm at 29s. 6d., and Charles Roberts 5s. shares strengthened to 19s. 9d. Birmingham Carriage were 30s. 10½d., Hurst Nelson up to 42s. at Glasgow, while steady demand put North British Locomotive better at 14s. 6d. Vulcan Foundry were 22s. 3d., Gloucester Wagon 10s. shares 15s. 6d. and Wagon Repairs 5s. shares 14s. 9d.